STEWARDSHIP OF LOCAL WETLANDS: ENVIRONMENTAL ETHICS AND TRADITIONAL ECOLOGICAL KNOWLEDGE IN FOUR RURAL NEWFOUNDLAND COMMUNITIES

CENTRE FOR NEWFOUNDLAND STUDIES

TOTAL OF 10 PAGES ONLY MAY BE XEROXED

(Without Author's Permission)

T.I. HOLLIS

Centre for Newfoundland Studies
MAY 11 2006
MEMORIAL UNIVERSITY
OF NEWFOUNDLAND

STEWARDSHIP OF LOCAL WETLANDS: ENVIRONMENTAL ETHICS AND TRADITIONAL ECOLOGICAL KNOWLEDGE IN FOUR RURAL NEWFOUNDLAND COMMUNITIES

by

©T.I. Hollis

A thesis submitted to the

School of Graduate Studies

in partial fulfilment of the

requirements for the degree of

Master of Arts

Department of Geography, Faculty of Arts

Memorial University of Newfoundland

July 2004

St. John's, Newfoundland

Library and Archives Canada
Bibliothèque et Archives Canada

Published Heritage Branch
Direction du Patrimoine de l'édition

395 Wellington Street
Ottawa ON K1A 0N4
Canada

395, rue Wellington
Ottawa ON K1A 0N4
Canada

0-494-06604-0

Your file *Votre référence*
ISBN:
Our file *Notre reference*
ISBN:

NOTICE:
The author has granted a non-exclusive license allowing Library and Archives Canada to reproduce, publish, archive, preserve, conserve, communicate to the public by telecommunication or on the Internet, loan, distribute and sell theses worldwide, for commercial or non-commercial purposes, in microform, paper, electronic and/or any other formats.

The author retains copyright ownership and moral rights in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

AVIS:
L'auteur a accordé une licence non exclusive permettant à la Bibliothèque et Archives Canada de reproduire, publier, archiver, sauvegarder, conserver, transmettre au public par télécommunication ou par l'Internet, prêter, distribuer et vendre des thèses partout dans le monde, à des fins commerciales ou autres, sur support microforme, papier, électronique et/ou autres formats.

L'auteur conserve la propriété du droit d'auteur et des droits moraux qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

In compliance with the Canadian Privacy Act some supporting forms may have been removed from this thesis.

While these forms may be included in the document page count, their removal does not represent any loss of content from the thesis.

Conformément à la loi canadienne sur la protection de la vie privée, quelques formulaires secondaires ont été enlevés de cette thèse.

Bien que ces formulaires aient inclus dans la pagination, il n'y aura aucun contenu manquant.

Canada

Table of Contents

Abstract

Environmental ethics is the study of the values and attitudes that guide the way we behave towards nature. Such studies are critical to addressing environmental and natural resource problems because value judgements are decisive when formulating decisions regarding the natural environment, whether by an individual or at policy-making level. This thesis is an exploratory study of environmental ethics, and local and centralised natural resource decision-making, in four rural Newfoundland communities. It examines the values associated with, attitudes towards, and uses of local wetlands in the context of a culture that has relied upon, and to varying degrees continues to rely on, local raw resources. In order to investigate the role that values assume in policy-making, a community level wetlands' stewardship programme, initiated from government level in two of the four study communities, is examined. This programme is also used as a case study of ethics in participatory community management.

This thesis adopts the culturalist view of the construct of people-human relations by focusing on how peoples' valuations of the natural environment are affected by the way they engage with nature through their activities in it. The broad range of values in local wetlands that are held by community members, and which bear significantly on decision-making stances, are predominantly connected to the uses people make of their local wetlands. The tradition of, and modern hunter-gatherer use of the local environs may foster an awareness of the connection between humans and the natural environment, and develop a stewardship ethic based on both anthropocentric concerns to protect natural resources for future use, and also a moral concern for nature. Promoting appreciative uses and values of the natural environment may be effective for an increasingly detached-

from-nature society but can lead to a separation from, and a privileging of specific aspects of nature. It can also foster a form of ethical elitism that can marginalise, and ignore the role traditionally developed ethics can play in addressing resource dilemmas.

This form of elitism can judge local practices rather than understand them for what they are. It is also imperative to critically analyse the ethics of environmental policies so they can be evaluated for what they are, and whose interests they prioritise. Because the Municipal Wetlands Stewardship programme, as policy, is value laden, and as participatory management retains the 'right' value judgement, it marginalises the ethics of local stewardship practices, or traditional ecological knowledge (TEK). To the extent that a group's traditional reliance on local resources has developed an intimate knowledge of, and relationship with local nature, these ethics can be considered as TEK. To the extent that, in a resource dependent society, we need an ethic that tells us as much about using nature as much as not using it, and the right values are those that have ensured the community's survival, these values can be considered TEK. To the extent that the rationale for studying TEK is the need to develop an environmental ethic by learning from the wisdom of holders of this knowledge, such ethics *should* be considered TEK.

Studying MWS highlights how policies enabling local concern should be built on the recognition that the value of localities to their inhabitants can form a powerful motive for environmental stewardship, but also how it constricts the avenues for the participation of TEK holders, and ultimately its effectiveness, by being value-laden and retaining the ethical autonomy within the arrangement. In concluding that local resource management can be built around historically developed and deeply felt concerns, it is shown that this is a legitimate strategy, both ethically and practically.

List of Tables

List of Figures

Acknowledgements

I wish to thank the Social Sciences and Humanities Research Council of Canada (SSHRC), and the Natural Sciences and Engineering Research Council of Canada (NSERC) who have provided the major funds for the "Coasts Under Stress" Project through the SSHRC Major Collaborative Research Initiative (MCRI) programme. Funding also provided by the host universities: Memorial University of Newfoundland and the University of Victoria. There are many members of the Coasts Under Stress team, from these institutions and elsewhere, who helped make my involvement in the project a rewarding and valuable learning experience.

Funding for this research has also been provided by the Eastern Habitats Joint Venture (EHJV), the employees of which also leant their assistance to the study.

I would like to thank my supervisory committee, Drs. Norm Catto, Brian McLaren, Barbara Neis, and Keith Storey, of Memorial University of Newfoundland, for their contributions to this research. In particular, I owe a huge dept of gratitude to Brian, who showed faith enough to support my research at the outset and has gone to great lengths on my behalf throughout its course. I hope that I have repaid his trust, and the patience and tolerance that such a student has demanded.

I am grateful to the many community representatives of the Stewardship Association of Municipalities, from across the province, for their help with this research and their wonderful hospitality. I would also like to thank the people of Gambo, Glovertown, Stephenville Crossing, and Parsons Pond who made my fieldwork an unforgettable experience. It was a privilege to be invited into your homes and listen to you. Thanks in particular go to the research assistants in each community: Jackie Wells (Gambo), Karen Sweetapple and Josie Jones (Glovertown), Robin Durnford (Stephenville Crossing), and Cavelle Jewer (Parsons Pond).

And to my parents, Audrey and Ron Hollis, for their never ending support. Thanks, Mum and Dad.

Chapter 1: Introduction

1.1 Environmental Values: A Brief Introduction

> The desert, including the barrens and (I would even say) especially those, appeals to me. I see in it purity, timelessness, a generosity of mind and spirit. In the tropical forest, where life is displayed in all its diversity and luxuriance, all I can see and smell is decay and death. The rainforest is clearly not my niche on earth.
>
> Yi-Fu Tuan

In his book, *Topophilia: A Study of Environmental Perceptions, Attitudes, and Values*, Tuan (1990) confesses his feelings towards tropical rainforests to illustrate the objectives of the discussion that follows it; to explore the differences in environmental attitudes and values between cultures, social groups within those cultures, and individuals. A group or individual may value the natural environment, or one particular area or aspect of that environment, for reasons as diverse as its importance as an economic resource base, to the much less tangible and definable 'object of profound attachment and love' (Tuan, 1990). It surely follows that *some* benefit must be conveyed in order for that environment to be valued; it must possess some utility tied to a specific goal (Burningham and O'Brien, 1994), be it material wealth or psychological contentment. Clearly, Yi-Fu Tuan does not possess any spiritual attachment to rainforests, and they neither assure him nor give him great pleasure to be in their midst. Yet one cannot conclude either that these environments have no value for him, that he cares nothing about whether or not they continue to exist. He may indeed care, and care greatly, for that value to him may be founded on a belief in their importance as timber resources, or on scientifically derived knowledge that tropical rainforests play an important

ecological role in the global environment, or simply because they are part of nature and, for this reason alone, are valuable and should be preserved.

Environmental ethicists identify this range of motivations behind environmental concern as environmental values that are, at one extreme anthropocentric, and at the other ecocentric. It is from these two positions that our attitudes and behaviours toward the natural environment are derived, whether consciously or subconsciously (Stenmark, 2002). While differing in strict definition, anthropocentrism and ecocentrism are also respectively referred to as instrumentalism (e.g., Stokols, 1990) or utilitarianism (e.g., Seligman, 1989), and biocentrism (e.g., Barrett and Grizzle, 1999). Anthropocentrism represents the view that nature possesses value because of the material and physical benefit it conveys to humans in terms of comfort, health and quality of life, and that humans, being separate from nature, are superior to other living things. Further, humans are the only moral subjects (possessing intrinsic worth) on earth and, as such, actions toward the natural environment and other species can only be amoral (Stenmark, 2002). Conversely, ecocentrism perceives humans as part of, and equal with, nature, and represents the valuation of nature for its own sake; it has intrinsic or inherent worth, independent of that which humanity obtains from it, and should receive moral consideration in its own right. Ecocentrism and biocentrism differ in the scope to which moral consideration for non-human entities is extended (see chapter 2). However, for the purposes of this thesis, it is satisfactory to employ the term ecocentrism as synonymous for non-anthropocentrism.

1.2 Thesis Objectives

This thesis is a study of environmental values, attitudes, and behaviour among members of the four rural Newfoundland communities of Gambo, Glovertown, Stephenville Crossing, and Parsons Pond. This thesis explores the relationship between these variables, and considers their consequences for environmental decision-making, both at local and centralised policy-making level. First settling on the island in the sixteenth century, Newfoundland's European colonial population has for centuries depended on its local natural environs for subsistence activities such as hunting, gathering, and small-scale farming (Overton, 1980; Omohundro, 1994). The focus of this thesis is on the ways in which people belonging to a culture of historic connection to the land relate to their natural environment, how these relations are changing in the face of the pressures of modernity, and the implications for management of that environment.

The primary context for this study of ethics is a comparative analysis of a contemporary, formal (or formally named) stewardship initiative, and informal, local stewardship. By formal, reference is made to the Municipal Wetlands Stewardship (MWS) programme initiated at local level in a number of Newfoundland communities by an agency of the provincial government. By informal or local, reference is made to the ethics underlying modern practices of local resource use, potentially developed over generations in rural Newfoundland. In this context, this thesis explores the applicability of the assumptions made in the theoretical literature regarding environmental ethics, and the practical outcomes of such value orientations in the specific context of rural Newfoundland. Further, it explores the reverse relationship, that is, the effect of the uses of wetlands encouraged by this formal stewardship programme, and the effect of intimate

contact with the local natural environment - or historically developed stewardship - on attitudes and values.

1.3 Attitudes, Values, Behaviour, and Environmental Ethics

Attitudes refer to an association with an object and an evaluation of it, and incorporate beliefs, feelings, and inclinations to act. While attitudes influence behaviour, so do many other forces in specific circumstances, since a person may have a multitude of attitudes toward specific objects and situations, resulting in a correlation between attitudes and behaviours that may not be as strong as logic would suggest (Fishbein and Ajzen, 1975; Wortman and Loftus, 1988). In this study, behaviour is separated into decision-making and physical use of the natural environment. Decision-making refers to both everyday decisions made by individuals regarding how they use the natural environment, and to actions of those with autonomy, as would be held by community members empowered by participatory community management structures. The reason for this separation is that 'use', that is, how people physically use the natural environment, is treated as a variable that influences attitudes and values, following Dunlap and Heffernan (1975), whereas behaviour is generally considered as a variable affected by values and attitudes (e.g., Rokeach, 1973).

Typically, general pro-environmental behaviours, such as recycling or voluntary reduction in energy consumption, are used as variables in the environmental value- or attitude-behaviour literature (e.g., Dunlap et al., 1983; Scott and Willits, 1994; Gagnon Thompson and Barton, 1994). However, the focus of this study is the use of the local natural environments of the four communities studied and the specific behaviour or

decision-making outcomes related to that which each community member possesses, to varying degrees, the power to steward.

Relative to the number of attitudes, people have few values, which are hierarchically organised by their relative importance to one another (Rokeach, 1973). Values are the standards that guide or determine, and maintain attitudes toward relevant objects and situations, and they represent our motives, reasons, or justifications for our actions (Rokeach, 1973). They have been found to be an important influence on an individual's position on environmental issues (Rokeach, 1967; Milbrath, 1979; Dunlap et al., 1983). Environmental ethics is made up of a belief system, an ultimate moral attitude, and a set of moral rules and standards with regard to the natural environment (Taylor, 1986), and refers to the 'environmental values' of ecocentrism and anthropocentrism. Not every individual possesses such a structured view, but everyone has some view about nature, how it functions, what we are able to know about it, and how we ought to relate to it (Stenmark, 2002).

While all actions toward the natural environment are consciously or sub-consciously informed by the above two extremes of environmental values, merely because people say that they ascribe to a particular set of values does not mean that they will act in accordance with that value judgement in every situation. In reality, while people may hold a particular view as to how we should treat nature, the adoption or exclusion of values is based on "a very wide range of social, cultural, economic and political priorities and commitments" (O'Brien and Guerrier, 1995, p.xiii). Indeed, very few people systematically employ one value principle or centrism in all situations (Barrett and Grizzle, 1999).

1.4 The Importance of Studying Values

The importance of studies of environmental values and their relationship with human behaviour is founded on arguments that, while solutions to environmental problems may require technological changes and improved scientific knowledge, they also require changes in the behaviours of people who utilise and are affected by altered technologies and advances in knowledge (Weigel and Weigel, 1978). Put bluntly by Maloney and Ward (1973), environmental problems are ultimately not technical problems, they are "cris(es) of maladaptive behaviour" (p. 583).

1.4.1 The roles of science and values in decision-making

> When they (the Forestry Department) look at this forest, they just see timber. When we look at the forest, we see a whole range of values.
>
> Member of the Maisin Aboriginal People of Papua New Guinea, referring to the Fraser River Valley, B.C., speaking on CBC Television's *The Nature of Things: Years From Here*, broadcast November 7th, 2002.

It is somewhat ironic that the philosophical roots of modern environmental ethics, and ensuing debates over the basis on which we should value the natural environment, are found in the accounts of the division between John Muir's 'preservationist' and Gifford Pinchot's 'conservationist' views for the management of natural resources over 100 years ago (see note 1). Muir, the first president of the Sierra Club, argued for the aesthetic and morally inspired preservation of nature, and stood in contrast to Pinchot, the first official forester of the United States, who viewed nature as a resource to be managed for productive use – use that is wise use, in the conservationist paradigm, but utilisation for the direct and maximum benefit of humans (Fox, 1981).

The irony appears in the presence of any misperception or assertion that natural resource and environmental management, backed by reductionist and quantifiable science, is somehow value-free. While it is possible to present an argument that Pinchot's influence created a forestry profession, and indeed other resource professions, based on anthropocentric management ethics (Norton, 1991) – technically and quantitatively managing resources and valuing nature in terms of its potential for economic exploitation – for now the more important concept to grasp is that nature *is* valued in a particular way by managers that fulfils a particular, value-laden purpose. Their decisions are made in a manner that reflects one or more value orientations or dominant philosophical views of nature. Pinchot (1987), for example, referred to the "economic motivation behind true Forestry" (p. 28), reflecting a management style founded on a dominant philosophical view of nature valued in terms of its economic, materialistic and wealth benefits.

Since resource management often concerns maximised measurable outputs of product, the manager's professional task may seem to involve no value judgment (Norton, 1991). However, to suggest that, merely because the assessment of natural resources has been conducted in a scientific manner, decisions pertaining to them are value-free is a fallacy. It is, in itself, a value-laden choice to frame management practices by science rather than, for example, experiential knowledge (Tuan, 1990). In any case, how one chooses to interpret and use scientific 'fact' is fundamentally value laden (Parker, 1995). Just deciding what is significant and worthy of measurement involves some degree of subjectivity (Bonnes and Bonaiuto, 1995). Frankena (1983) observed that disagreements between technical experts more commonly emphasise explicit value issues than they do factual information and unquestionable truth. Moreover, how human culture should fit

into the order of nature is an ethical question, not a matter of biological fact (Taylor, 1986). As Fekete (1988) notes, no aspect of human life is unrelated to values, valuations and validations.

While science can tell us what is the case, for example the maximum sustainable yield of a forest, and how to realise it, additionally it could inform the decision-maker that such practices will destroy the habitat of an endangered species. What *ought* to be done is not a question that can be answered by science, since a value statement, prioritising either productive values or those of preserving the endangered species, is required to make a decision pertaining to that forest (Stenmark, 2002). Environmental decision-making involves, at a minimum, interactions between natural science and value systems or ethics, and ethics is the development of a conceptual framework by which we determine what ought to be, instead of what is (Grizzle, 1994). It is impossible to formulate environmental policy unless scientific information is supplemented with certain value judgements (Stenmark, 2002). Environmental conflicts are human conflicts over nature's value, humans who hold "fundamentally different views about the nature, significance and value of environmental attributes" (Haigh, 1995, p. 195), a point that is exemplified by resistance offered by First Nations groups to the Forestry Department in the Fraser Valley. Neither the conservationist nor preservationist would likely disagree over the empirical facts that the forests *can* be used to produce a given maximised measurable output of lumber; the conflict is over how it *ought* to be used: whether toward such economically productive ends, or toward the preservation of other values. Ultimately, the conflict is rooted in 'the range of values' of the forest perceived by the conflicting parties.

1.5 Community Management of the Environment and Natural Resources

While the above discussion applies to any decision in managing natural resources (indeed *every* decision is informed by values), of particular interest here is its application to concepts of participatory community management. This study evolved from the original objective of evaluating the effects of Municipal Wetlands Stewardship, a programme initiated to protect critical wetlands habitat for migratory waterfowl in rural Newfoundland. This programme remains a focus of the work, and serves as a 'subject' community environmental management programme, taking a number of the issues raised by studying its effects, and discussing them in a broader ethical context.

If participatory community management initiatives purport to constitute true involvement and participation of the community in the decision-making process, then such programmes must be devised with due regard for the construct of local values, allowing the full participation of local moral autonomy and not forcing existing centralised institutional values on the community. This is not merely an idealistic call for the democratic inclusion of locally held values into decision-making. Prudent environmental planning demands a more thorough understanding of the attitudinal and value-related, as well as behavioural consequences of various policy options (Weigel and Weigel, 1978). For example, value differences may be important to consider in the design of programmes to encourage pro-environmental behaviours, since individuals who support environmental issues for ecocentric reasons may respond to different appeals than those who support environmental issues for anthropocentric reasons (Gagnon Thompson and Barton, 1994).

Indeed, without a consideration of values, community management initiatives may become not only ineffectual, but nothing more than an education in ethics: "Any approach which privileges a 'right values' perspective can only logically result in calls for public moral 'training'. If the 'right values' are decided by 'experts', then all that remains is to train the populace. This is in direct contradiction to the widely recognized need for communities to 'own' their values" (Parker, 1995, p. 38), part of the process required for local ownership of policies, necessary for them to gain significant support by communities. Resource management must be socially acceptable (McCay and Acheson, 1987), which equates to the need for the integration of values into the process (Pitt and Zube, 1987). Defining environmental problems more effectively, and understanding the elements of those problems that fall outside of the scientific realm, together with this ownership of socially acceptable solutions, is the rationale, as outlined by Mitchell (1997), for involving communities in resource and environmental management.

1.5.1 Ethical knowledge

The awareness of what aspects of the natural environment are locally valuable to the community, and why, is what Parker (1995) calls 'ethical knowledge'. Ethical knowledge recognises that the natural environment inspires a vast array of values, and nobody is better placed than local people to know the value of where they live:

> At least one important feature in this process (the development of environmental concern) has been the concern of local people for the distinctive environments which they inhabit…Policies enabling responsible local concern should be built on the recognition that the value of localities to their inhabitants can form a powerful motive for local environmental stewardship. At present the supposed 'general benefits' of development schemes can be much more clearly stated than can the general loss of specific environments. It is at this point that the local awareness of the value of the specific environment under threat is quite

> literally irreplaceable. Who else, except those who actually live there, can know in depth the value that is to be found in living life in that particular place? (Parker, 1995, p. 44-5)

In *Finding Our Sea Legs,* McGoodwin et al. (2000) wrote of the volume's studies of local ecological knowledge among Newfoundland fishers: "The collection leaves largely unexplored the problematic assumption that our fisheries are managed and the management is science-based. We have not explored the possibility that the pursuit of profit actually drives fisheries, with management and science following in its wake" (p. 258). The problem with this observation is that it suggests that the normative statement (fisheries should be managed for profit) is derived from policy, and implies that the objectives of management, employing scientific expertise, would pursue different goals. McGoodwin et al. (2000) go on to imply that if management and science took the lead, fisheries could be managed more sustainably, yet the normative principles of 'for profit' and 'for sustainability' belong in the same ethical family of anthropocentrism (Stenmark, 2002), and, necessarily, this statement takes no account of values in the fishery that transcend those that are anthropocentric-based. Do fishers value the marine environment purely in terms of the income they gain or profit they can make? Or does the traditional connection to the sea inspire complex values tied to "deep spiritual and cultural meaning" (Brunk and Dunham, 2000, p. 27) beyond values that scientific management is able to bestow? Would the incorporation of these values result in practical differences to the way the resource is managed? It is outside of the scope of this work to comment specifically on the Newfoundland fishery in this way (although it does hope to encourage such questions as these), but there are parallel questions relating to the local non-marine

resources that are explored in this work, such as those pertaining to the primarily economic value of expanding tourist hunting, versus the values attributed to local subsistence practices. The question 'to what end should a natural resource be managed?' is relevant to resources whatever their nature. Whichever natural environment, and whatever its commercial importance, overall, this work relates to all scales of decision-making by aiming to show that community resource management that incorporates the ethical knowledge of those communities may result in very different policies and approaches to their management (Stenmark, 2002) and, thus, highlights the need to properly engage the issue of values in environmental policy making.

Notes

1. Conservationism may be regarded as a weak anthropocentric stance in that, while it does advocate the direct human use of the environment, it stipulates that such resources are to be used wisely. Similarly Muir's preservationism does not adopt the full range of ecocentric theory but does emphasise protection of the natural environment from alteration by humans on aesthetic and moral grounds (Norton, 1986).

Chapter 2: Thesis Evolution and Literature Review

2.1 Groundwork for the Study: The Original Thesis Objectives

The original objective of this thesis was to evaluate the effects of Municipal Wetlands Stewardship (MWS), a programme initiated to protect critical wetland habitat for migratory waterfowl, in a number of communities in rural Newfoundland. This section describes the programme and the rationale behind the re-focusing of the study.

2.1.1 Background to Municipal Wetlands Stewardship

In 1986, Canada and the United States signed the North American Waterfowl Management Plan (NAWMP) and committed themselves to a long-term programme of Joint Ventures aimed at assuring the survival and increase of waterfowl populations, and the preservation of the habitats on which their survival depends. These ventures combine the resources of federal and provincial government or state agencies, with those of non-government conservation organisations to protect and manage important wetland habitat in a particular region for the benefit of waterfowl and other wetland wildlife. Under this plan there are currently thirteen Joint Ventures, one of which is the Eastern Habitats Joint Venture (EHJV) (Eastern Habitats Joint Venture, n.d.).

The objective of the EHJV is to secure the waterfowl resources of eastern Canada (and thus, by extension, of the Atlantic and Mississippi flyways) by protecting, maintaining, and enhancing the abundance and quality of wetlands in the six eastern Canadian provinces. The Newfoundland and Labrador EHJV programme focuses largely upon stewardship agreements for the protection of these wetland areas. Through Wetland

Stewardship Agreements, landowners, managers and municipalities pledge to conserve wetlands and associated uplands within their jurisdiction.

MWS involves a municipality taking responsibility for and carefully managing its wetlands. There are no laws or regulations forced upon the town and, while the EHJV may make recommendations, offer advice to the town, and assist in the writing of a management plan for the community's wetlands, decision-making authority over the wetland areas remains with that town (EHJV, n.d.). Thus, MWS may be considered as a form of co-management involving a partnership between the EHJV and a community and, while co-management arrangements can involve no more than token participation of a community (Berkes et al., 1991), this arrangement appears to constitute a level of community empowerment and participation tending toward 'citizen control' on Arnstein's (1969) 'ladder of citizen participation'.

2.1.1.1 *Ethical Basis of MWS*

In the context of the purposes of this work, it is necessary to briefly restate and ethically examine the objectives of NAWMP. Its primary objective is to preserve wetlands considered important for the continued survival and increase of waterfowl populations (EHJV, n.d.). Thus, while the plan recognises the various values wetlands possess (for example, their ecological roles), it is those wetlands that provide critical habitat for waterfowl that are the focus of the agreement. It is the conservation value of waterfowl with which the plan is concerned, and on which its policies are based. In an ethical analysis, the question that follows is "why does the plan seek to protect waterfowl; ultimately what environmental ethical framework underpins this goal?" Explicit ethical clarity in policy is rare, if ever present (Stenmark, 2002), and one might track each parent

agency or government department up the chain of command (for example, EHJV, NAWMP, U.S. Fish and Wildlife Service, U.S. Department of the Interior, or Environment Canada) without finding an explicit answer to this question. However, the U.S. Fish and Wildlife Service states, in its introduction to the objectives of NAWMP, that "by 1985, approximately 3.2 million people were spending nearly $1 billion (U.S.) annually to hunt waterfowl" and "18.6 million people observed, photographed, and otherwise appreciated waterfowl and spent $2 billion (U.S.) for the pleasure of doing so" (www.birdhabitat.fws.gov/NAWMP/nawmphp.htm). Of the 75% of the programme's funding that comes from south of the border, one half is contributed by the U.S. Fish and Wildlife Service, and the other half by Ducks Unlimited, a group pursuing the interests of sport hunters. The remainder comes from Wildlife Habitat Canada, whose funding derives from hunting licences. It is clear, therefore, that the management of the natural environment and of waterfowl, as a resource, on an anthropocentric basis motivates the EHJV and, consequently, MWS.

2.1.2 Original thesis objective

The original objective of this thesis was to study the effects of MWS. While the key physical indicators of species and habitat protection were to be investigated, these alone would not constitute a comprehensive examination of the programme's effects for a number of reasons. First, the health of waterfowl may be affected elsewhere on their migratory routes. Further, the significance of observing that a wetland had remained free from development or other uses adversely affecting its integrity is questionable. For example, a municipality that voluntarily affords legal protection to wetlands may only differ from another in its perception of a need for development prohibitions, and indeed

the significance of a wetland remaining in its natural state could only be evaluated in the context of the threats to which it had been exposed. Indeed it is unlikely that a municipality would have adopted the Stewardship Agreement had that municipality's wetlands or associated uplands been considered prime development areas. More importantly, at least as critical as the physical condition of the wetlands, is the goal of the MWS programme of creating 'stewards of the wetlands', broadly speaking to foster attitudes and values of concern for the careful management of the wetlands, sympathetic to their long-term protection. This is necessarily key to a voluntary stewardship programme considered as an alternative strategy to land acquisition or legislated protection. Ultimately, the true test of environmental programmes that seek to educate or change attitudes is the evolution of an ethic of respect and concern for the natural environment among those who are subject to that programme (Kellert, 1983). The evolution of such an ethic among members of communities participating in the MWS programme is considered key to the programme's success because, as will become clear, the adoption of the programme by a community can be based on a range of values including the economic benefit of protecting local wetlands. However, protection motivated by economic value may be a precarious existence for a wetland, since the motivation to protect the wetland would cease should the economic benefit it conveys cease, or a more efficient economic use be found for the area. In addition, the affective (seeking attitude and value change), as well as cognitive (seeking knowledge gain), objectives are explicitly articulated by the EHJV (n.d.):

> This (the promotion of ecologically sound landscape use) will be accomplished through indirect programs of policy change and public education related to wetland values (p.6).

Accordingly, this research focused on the human dimension of stewardship, based on the premise that the key to successful stewardship is the stewards themselves, and the key indicators were considered to be the degree to which members of the stewardship communities have learned, become aware of, and developed a concern for their wetlands and the environment in general. In other words, whether or not the core concept of stewardship - the transfer of responsibility for the wetlands - had been accepted was explored. In particular, it was to focus on the changes in environmental attitudes and values held by community members, since it was hypothesised that the adoption of a stewardship role, that is, the voluntary assumption of responsibility for decisions affecting a natural environment, may foster the development of environmental concern among its participants (Lerner, 1993).

It was also of interest to test the hypothesis that a stewardship programme on a specific level (MWS) leads to those exposed to it thinking and behaving more responsibly toward the natural environment in general. Such a hypothesis is drawn from Lerner's (1993) study of a number of stewardship groups and her conclusion that involvement in one particular environmental issue is likely to lead to the development of broader environmental interests, and plays a significant role in developing 'environmental-vanguard' qualities in its active members. 'Environmental-vanguard' qualities are characteristic of people placing a high valuation on a safe and clean natural environment and exhibiting behaviour that reflects such a valuation (Milbrath, 1984).

2.1.3 Evolution of the thesis

The value, attitudinal, and behavioural effects of the MWS programme were explored by studying two communities participating in the programme, and two 'control'

communities. However, at an early stage of the fieldwork, it became clear that the attitudinal and value effects of MWS were, at most, subtle. There *were* significant differences between communities, but these could not be attributed with any confidence to the presence of the stewardship agreement. While the presence of a stewardship agreement may have caused changes, it is likely that many of these differences would be very subtle in relation to the baseline differences and would effectively be swamped by the differences already present in the communities. For this reason, the effectiveness of employing control communities to gauge changes elsewhere became questionable. Furthermore, since the adoption of MWS is voluntary and requires the support of the community *before* its application, it is possible that communities that chose to adopt the programme already possessed attitudes and values resembling 'vanguard qualities'.

The absence of any prior research to explain how and why any two communities in the study differed in their environmental attitudes and values presented the incongruity that forms the basis of the thesis' current objectives. If the proponents of a programme that necessarily attempts to change attitudes and values do not have a thorough understanding, or access to information to gain an understanding, of locally held attitudes and values, then they cannot know the attitudes and values they seek to change. Without such knowledge, it is impossible to measure the changes brought about by the programme, and thus whether or not the programme has achieved its environmental ethics' goals. The risk associated with this lack of knowledge lies in the fact that it is a misperception that, at worst, the outcome of an environmental programme will have zero effect (de Young, 1993). In other words, it is possible that value and / or attitudinal changes affected by the programme might actually run counter to its objectives.

2.2 Existing People-Nature Relations Literature

The question of how people relate to the natural environment, incorporating values, attitudes, perceptions, and behaviours, enjoys a wealth of literature dedicated to its answer. Indeed, in his review, Knopf (1987) notes that this has been a preoccupying question throughout history, while history, and shifts in people-nature relations therein, have been subject to such studies (see for example, Glacken, 1967). Knopf (1987) suggests that opinions vary according to the focus of the enquiry. Among other disciplines, natural resource management, recreation and leisure studies, theology, philosophy, psychology, sociology, environmental and resource economics, and geography have all contributed to the field, reflecting the diversity of reasons why the natural environment holds value for people. The anthropocentric view of nature as a tangible and quantifiable resource is the concern of, for example, resource economics. While this may not be the most important values nature possesses for all people, natural resource management, natural science, and economics can, perhaps, be forgiven for not acknowledging (or at least incorporating) the 'immeasurable' ecocentric valuation, since such values are not even easily articulated:

> People need contact with trees and plants and water. In some way, which is hard to express, people are able to be more whole in the presence of nature, are able to go deeper into themselves, and are somehow able to draw sustaining energy from the life of plants and trees and water (Alexander et al., 1977, p. 806).

Attention to the importance of ecocentric values, such as aesthetic, spiritual, and affective is found, for example, in the psychological literature. Kaplan and Kaplan (1989), reviewing hundreds of such studies found that contact with nature results in lower stress levelled and healthier individuals who, over the long term, are more likely to express

satisfaction with home life, work life, and life in general. Such values cannot adequately be described in cost-benefit analysis terms.

2.2.1 Nature as a cultural (learned) experience

While not dismissing the perspective that people-nature relations are innate responses, that is, humans are born with an orientation to nature, this work focuses on the culturalist perspective that the environment holds different values for people with different life experiences (e.g., Kaplan, 1983; Tuan, 1990) and are products of culture (e.g., Steward, 1955; Moore, 1979; Douglas and Wildavsky, 1982; Benton, 1997). In this view, values are conditioned by the society to which people belong and depend on the way that people have experienced nature (Knopf, 1987).

Although contemporary societies display contradictory orientations toward nature (Stainbrook, 1968), studies of human-nature relations among various groups of society have tended to concentrate on distinct cultural groups, such as First Nation Canadians (e.g., Berkes, 1999), aboriginal Australians (e.g., Strang, 1997) or various Asian, African, Polynesian or South American religious cultures (e.g., Callicot, 1994). Studies of the environmental values and attitudes of sub-groups of contemporary Western society typically separate these groups by rural or urban residence (e.g., Lowe and Pinhey, 1982; Arcury and Christianson, 1993), and by employing various demographic variables. Generally, variables such as income, age, gender, and education have been found to have little explaining power in terms of their relationships with environmental values and attitudes (Van Liere and Dunlap, 1980; Samdahl and Robertson, 1989; Seguin et al., 1998). The inability to generalise empirical finding with respect to demographic

variables, Brand (1997) contends, is a result of the context-related (particularly cultural context) nature of environmental consciousness.

2.2.1.1 *Use of Nature and Environmental Values*

Consistent with the theory of nature as a learned experience, if human-nature relations depend on the way that people have experienced nature (Knopf, 1987), there exists the implication that the way different cultures, and people belonging to those cultures, are exposed to nature through use has a significant role to play in the development of environmental attitudes and values. Indeed, in addition to spiritual beliefs, studies of indigenous groups' environmental ethics focus on the way these groups *use* their natural environments (e.g., Berkes, 1999; Brody, 2001). In the context of modern society, Hayward and O'Neil (1997) note that:

> Gardeners, hunters, anglers, farmers, landscape painters, ecologists, naturalists, ramblers, astronomers, ornithologists, climbers and others come to their different understandings and valuations of the world they engage with through activity and reflection upon it (p. 35).

Also in contemporary contexts, Dunlap and Heffernan (1975) tested hypotheses concerning the relationship between participation in outdoor recreation activities and environmental concern, following suggestions that the increase in such activities from the 1960's onward was partly responsible for the emergence of concern with environmental quality, made by Davies (1970), Gale (1972), and Albrecht (1975). That is to say, they examined whether behaviour influences attitudes and values, instead of treating attitudes and values as variables influencing behaviour (Rokeach, 1973).

Dunlap and Heffernan (1975) found a positive association between participation in outdoor recreational activities and environmental concern. Following Hendee (1969),

they differentiated between 'consumptive uses' of the natural environment, which involve taking something from the natural environment, such as hunting, and 'appreciative uses', which involve enjoyment of the natural environment without deliberately altering it, such as walking or looking. Dunlap and Heffernan's (1975) results were a result of a strong relationship between appreciative use and environmental concern, and a negligible relationship between consumptive use and environmental concern. In particular, they found a stronger association between participation in outdoor recreational activities and concern for protecting aspects of the environment necessary for pursuing such activities than between participation in outdoor recreational activities and more distant environmental concerns. Geisler et al. (1977), Pinhey and Grimes (1979), and Van Liere and Noe (1981) found negligible or weak support for their theses. Jackson (1986), however, found that appreciative users held stronger pro-environmental attitudes than consumptive users, and also supported the Dunlap and Heffernan (1975) findings that users' concern is stronger with respect to specific aspects of the environment necessary for pursuing these activities than toward general environmental issues.

While re-testing of the Dunlap and Heffernan (1975) thesis has produced mixed results, the significance of their contentions warrants further examination. Were a connection found between uses in nature and pro-environmental constituencies, this, as they suggest, would have significant implications for efforts to achieve and maintain environmental quality. Arguing for further research in the field, Nord et al. (1998) notes that, "If outdoor recreation leads to increased environmentalism, then funding, promoting, and operating parks and outdoor recreation facilities and programs may be effective components of a strategy for protecting and improving the natural environment" (p. 236).

The significance of this manner of research relates to an ethical study of MWS where this programme encourages particular uses of local wetlands. It also relates to the question of values and attitudes that may be fostered by a continuing tradition of local consumptive practices in rural Newfoundland.

2.3 Cultural Context of Rural Newfoundland

Consideration of the specific and cultural contexts in which values arise is a necessary step, beyond the analysis and generalisation of simple demographic variables, in the understanding of environmental perceptions (Stern and Oskamp, 1987, Brand, 1997). According to the culturalist Tuan (1990):

> To understand a person's environmental preference, we may need to examine his biological heritage, upbringing, education, job, and physical surroundings. At the level of group attitudes and preferences it is necessary to know a group's cultural history and experience in the context of its physical setting. In neither case is it possible to distinguish sharply between cultural factors and the role of the physical environment. The concepts "culture" and "environment" overlap, as do the concepts of "man" and "nature" (p. 59).

Consideration of the differences between cultural groups leads one to consider how the culture of rural Newfoundland influences human-nature relations. The 'cultural context' of rural Newfoundland is not merely a product of its rurality in the way that is defined as a control variable in the analysis of environmental attitudes and values. Studies of rural-urban differences, such as those summarised by Van Liere and Dunlap (1980) and more recently undertaken by Arcury and Christianson (1993), have limited application to the rural Newfoundland context. Where differences in attitudes and values have been found between urban and rural dwellers, these have tended to be dismissed as being caused by demographic differences; including age (which tends to be higher in

rural areas), and income and education levels (both of which tend to be lower in rural areas) (Arcury and Christianson, 1993). This is an unsatisfactory explanation for rural-urban differences, since these variables are no longer considered reliable predictors of environmental concern and behaviour (Van Liere and Dunlap, 1980; Samdahl and Robertson, 1989; Seguin et al., 1998).

Researchers have relied heavily on rural farming, mining, and logging communities for comparisons of rural with urban society (e.g., Lowe and Pinhey, 1982; Arcury and Christianson, 1993). Yet environs that are close representations of natural or pristine environments do not surround these manners of communities. For example, agricultural land would have necessitated draining or clearing the original environment. Indeed, both urban and farming communities are comparable in the sense that both have necessitated altering the surrounding environment, albeit in different ways.

The context of rural Newfoundland, it is argued, is very different from the urban "view of people who are far removed from the natural environment they depend on for raw resource" (Gomez-Pompa and Kaus, 1992, p. 273), in terms not only of physical place, but also of culture. Omohundro (1994) describes the relationship between the culture of rural Newfoundland with that of North America as 'peripheral', and Okihiro (1997) suggests that many assumptions made about North American life are not appropriate here. The four communities in this study are rural, not urban, but unlike the majority of rural areas in the above studies in which farming is the main activity, in rural Newfoundland there has existed a 'hunter-gatherer' relationship with the land (Nemec, 1993) (see Brody, 2001, for an explanation of the importance of the distinction between the agriculturalist and the hunter-gatherer). The relatively pristine natural environs that

are on the doorsteps of communities are, by and large, treated as common property (Okihiro, 1997). For centuries they have been, and continue to be, a key source of subsistence activities such as hunting, trapping, wood cutting, and berry picking, as well as small-scale farming (Overton, 1980; Omohundro, 1994), and 'unfettered access to the great outdoors' (Felt and Sinclair, 1995b) is considered to be one of the most important values to residents of Newfoundland's Northern Peninsula. These activities remain perceived as a right of rural Newfoundland community members (Okihiro, 1997), a 'regional mark of distinction' and 'expression of self esteem' (Omohundro, 1994), and a revered part of community life, if not imperative for survival during harsh economic climates (Cadigan, 2002). Further to section 2.2.1 (above) it is these uses and their influences on values and attitudes that are of particular interest to this study.

2.4 Newfoundland-Specific Literature Concerning People-Nature Relations

With regard to the literature related to this thesis that is specific to rural Newfoundland, a wealth of research has examined the fishing way of life, and the history and dynamics of fishery-related economic, cultural, social, and ecological elements of rural Newfoundland communities (e.g., Newell and Ommer, 2000; Neis and Felt, 2000; Ommer, 2000a). Historians and geographers have discussed the relationship between economy, ecology, and population (e.g., Mannion, 1977; Thornton, 1980) in these communities. Less attention has been paid to the non-marine environment and its role in shaping rural Newfoundland culture, although some researchers have reflected on the role of terrestrial environments and resources in subsistence activities (e.g. Cadigan, 1994, 2002; Felt and Sinclair, 1995a). Omohundro's (1994) corner stone study employs a

cultural ecology perspective to document communities living off of the land, describing rural Newfoundland life as constrained by participation in the ecosystem.

In general, existing research has focused on the value of the natural environment for economic development, subsistence and/or survival, and on local responses to the pressures of modernisation, rather than on the range of values rural Newfoundlanders attribute to the natural world, particularly the terrestrial environment. While sociological, anthropological, historical, and ethical perspectives (e.g., Coward et al., 2000) are all represented in the existing research, deeper ethical examinations of the role of nature in the lives of rural Newfoundlanders are largely absent. Portraits of a culture that "wove ecology and economy into a seamless way of life and maintained a balance between people and their environment" (Ommer 2000b, p. 25) suggest the presence of community ethics of the commons associated with this way of life. However, these ethics, and their implications for environmental and resource policy, lack appropriate study.

Studies of indigenous cultures environmental relations, referenced above, are described as studies of these groups traditional ecological knowledge. Berkes (1999) describes such knowledge as "not just a system of knowledge that comes into play, but social systems that have different ways of going about things; different beliefs and values, different priorities, different decision-making systems" (p. 165). They are ethically based "authority system(s) of rules for resource use" (Berkes, 1999, p. 6). Studies of *local* ecological knowledge held by rural Newfoundlanders (e.g., Neis and Felt, 2000) differ not only by the terminology employed, but also by their scope. Ethics underlying local resource use practices are left largely untouched by studies of local ecological knowledge in Newfoundland, these studies being concerned primarily with complementing scientific

knowledge (e.g., Fischer, 2000; Hutchings and Ferguson, 2000; Wroblewski, 2000). There exists no good reason why this broader scope of traditional ecological knowledge should be restricted to First Nations. To the extent that a group of rural people, relying for generations on local resources for their livelihoods, and forming a relatively closed society, they too have come to possess an intimate knowledge of, and relationship with local nature, and have developed ethics that frame that relationship.

2.5 Environmental Ethics

The fundamental question debated in the environmental ethics literature, which first appeared in a structured academic form in the mid-1970's, is how ought we behave with respect to the natural environment. This, the normative ethics debate, has concentrated almost exclusively between human-related (anthropocentric) and nature-orientated (ecocentric) value orientations (Norton, 1986). The field of descriptive environmental ethics notes that Western society has developed with the anthropocentric view of humans as superior to and dominant of, nature, and within the shadow of classical economic theory that treats nature exclusively as a resource. Modern-day environmental legislation operates predominantly on anthropocentric management principles (Kealey, 1990, Stenmark, 2002); that which does protect non-human entities does so to protect the interests of humans rather than for the sake of the non-human entities themselves (Hayward and O'Neil, 1997). Modern policies espousing sustainable development continue to operate under such principles, the notable difference from the strong anthropocentrism reflected in the history of Western development being the inclusion of obligations toward future generations. In this way, sustainable development puts humans,

both present and future, at the same moral worth – an ethic of 'intergenerational anthropocentrism' – and it also differs by explicitly acknowledging that resources are finite (Stenmark, 2002).

It is an anthropocentric worldview that underlies modern Western society's "belief in abundance and progress, our devotion to growth and prosperity, our faith in science and technology, and our commitment to a laissez-faire economy" (Dunlap and Viere, 1978, p. 10). The consequences of such a human-oriented ethic, that is, the justification of environmental degradation as an acceptable sacrifice given the human benefits, ultimately resulting in the current environmental crises, provide the basis for the ethical criticism of anthropocentrism (e.g., Nash, 1989; Callicot, 1989; Rolston, 1994). It is argued nature cannot be sufficiently protected if it is only valued as a resource that can be utilised for human ends (e.g., Ehrenfield, 1978).

Proponents of anthropocentric ethics, or the explicit inclusion of anthropocentrism into an ethical foundation for the way we should treat nature, such as Norton (1991), Grizzle (1994), and Marrietta (1995), argue that, a practical, acceptable ethic to a consumer oriented society must include anthropocentrism, since modern human society is unlikely to accept a position that does not place people above nature and would view non-anthropocentric policies as too radical. Norton's (1991) anthropocentrically-inclusive view advocates fairness to intrinsic-value-possessing non-human entities, but not to the extent that such actions constrain human-well being, and Marrietta (1995) views it as morally adequate to recognise that humans are part of nature while simultaneously being more than that (i.e., remaining superior to nature). At the root of both Norton's (1991) and Marrietta's (1995) work is the 'convergence hypothesis' that "environmentalists are

evolving toward a consensus in policy, even though they remain divided regarding basic values" (Norton, 1991, p. 86). This argument, effectively suggesting that the basis on which one values the environment does not make a difference in practice is strongly refuted by, for example, Taylor (1986), Stenmark (2002), and Callicot (1995):

> The eventual institutionalization of a new holistic, non-anthropocentric environmental ethic will make as much practical difference in the environmental arena as the institutionalization of the intrinsic value of all human beings has made in the social arena (p. 24).

Non-anthropocentric proponents agree that the solution to environmental problems must go beyond an enlightened anthropocentric view of using resources more efficiently and far-sightedly, and requires the development of an ethic of respect for nature (Stenmark, 2002). This movement disagrees, however, predominantly over the extent to which moral consideration should be extended to non-human entities, that is, to what species and to what extent, relative to human worth. The ethics of biocentrism extend this consideration to particular non-human species, such as found in the animal rights movement (e.g., Regan, 1983), or as far as all living entities that Taylor (1986) argues should be treated as possessing equal value to humans (see note 1). In ecocentrism this moral consideration is extended to landscapes, water, and air, that is, entire ecosystems, and is concerned with the natural community as a whole rather than the individual parts. All actions should be judged by their effect on the survival of the system and, therefore, ecocentrism permits the killing of an animal as long as the species' population is not threatened, or the felling of a tree as long as the forest is not threatened (Stenmark, 2002). In this view, the stability of the whole is important, a view that is famously found in Leopold's (1949) 'Land Ethic', and more recently found in work by

Rolston (1988), Callicot (1989), and Devall and Sessions' (1985) 'deep ecology'. Stenmark (2002) further categorises these two non-anthropocentric positions into 'strong' or 'weak', and 'value differentiated' or 'undifferentiated' bio- or ecocentrism, reflecting the extent to which moral consideration is afforded to non-human entities.

2.5.1 Ethical focus of the thesis

The ultimate objective of environmental ethics is the identification and encouragement of a set of values that frame behaviour within bounds that will protect and enhance the natural environment. This work examines the ethical dualism, presented in the environmental ethics literature, in the context of rural Newfoundland, exploring their practical, or decision-making, outcomes, and the extent to which apparently non-environmental values influence decision-making, and also considers the MWS programme in the context of this ultimate objective. Rural Newfoundland communities, through centuries of intimate contact with and use of the local environment, have developed systems of rules and management, however unwritten and informal (Ommer, 1994); systems that may be considered historically developed stewardship practices. Without attempting to understand these practices and, where appropriate, encouraging and learning from them, community orientated programmes, such as MWS, may become merely management of behaviour by the manipulation of values in favour of the policy-makers set of 'right' (i.e., their own) values.

Notes

1) Stenmark (2002) argues that, while Taylor rejects the idea of human superiority, there are qualifications within his work, such as the right for humans to assume greater importance than other living things when human life or basic needs are in danger, which compromise this position.

Chapter 3: Method and Community Descriptions

3.1 Research Method

The question, posed by the original objectives of the thesis, of how to identify the development of 'vanguard qualities', or a general pro-environmental constitution was approached by investigating the values, attitudes, and uses of the natural environment generally, and local wetlands specifically, among residents of the communities participating in the MWS programme (stewardship communities). Due to the time limits inherent to a master's thesis, only one season of fieldwork was possible, that is, the study of each community could only take place once, and the opportunity to re-visit a community to test for changes over time was not possible. Thus, two stewardship communities, and a control community for each, were chosen for study. Each control community chosen was the closest geographically to the stewardship community that shared similar demographics and wetland resources. The intentions were to study values, attitudes, and uses in both a stewardship and non-stewardship community, and identify differences that could be attributed to the presence of the stewardship agreement. A description of the four communities is presented later in this chapter.

3.1.1 Investigative tools

Following preliminary studies, involving informal visits to a number of stewardship communities and attendance at a bi-annual meeting of the representatives of these communities ('The Stewardship Association of Municipalities') it was apparent that the way that each agreement was executed and functioned varied significantly between participating communities. By the very nature of MWS, it is to be expected that the

agreement affords the freedom for communities to choose an appropriate approach to stewarding their local wetlands rather than a structure dictated by the EHJV. Necessarily then, the tangible, visible effects of each agreement varied greatly. The process of the fieldwork in each of the stewardship communities, therefore, began by interviewing the 'leaders' of the stewardship initiative in those communities, that is, those who are responsible for, or oversee the functioning of the agreement, in order to identify what had been carried out as a result of the agreement. This was with the view to subsequently interview community members and establish a cause and effect relationship between attitudes, uses and values, and the stewardship agreement itself. For example, a community member might have been exposed to educational media that was produced as a result of the stewardship agreement, which then led to him or her re-thinking his or her attitudes toward a local wetland and involving themselves in its conservation, preservation, or enhancement.

The human effects of the stewardship agreement, however, remained ill-defined and anything relevant to attitudes and values toward the wetland or the environment generally might be relevant to the study. It was important not to miss any such data and therefore a non-quantitative, semi-structured interview, allowing respondents the opportunity to talk as much as they wished, expand and reason their responses, and define problems in their own terms (Kahn, 1999) was chosen. It was also chosen to avoid the 'false dichotomies' (Kahn, 1999) frequently offered by questionnaires, that is, how people perceive nature was deemed too complex for the blunt instrument of a yes / no questionnaire. Instead the 'long interview' (McCracken, 1988) approach was adopted that allowed participants to generate an idea instead of agree or disagree with one generated

by the author. The predicted depth and complexity of nature relationships dictated such an approach and avoided forcing respondents into hypothesised rigid categories rather than real world situations (Norton, 1991). Overall, since no measuring instrument has emerged as standard in the field of environmental attitudes (Stern, 1992), an approach was adopted based on McCracken's (1988) interview technique, designed to explore undefined information. Results from these qualitative responses are accordingly not merely presented in numbers.

Having identified the local wetland with which they were most familiar, respondents were questioned, for example, about their perceptions of its importance, how they used it, and how and by whom it should be managed. A number of questions overlap or are restatements of other questions in different ways so that: 1) no important information was excluded and; 2) consistency in responses could be checked. The basic semi-structured interview is presented in Appendix 1. The questions, presented in the interview sheet, were posed by the interviewer in a manner that reflected the objective of creating an informal atmosphere, whereby the respondent felt comfortable to develop and express his or her own ideas, and more fully articulate his or her opinions. While the interviewer used the question sheet to ensure that all areas were covered, he or she avoided the systematic execution of each question and the drawing of attention to the question sheet, in favour of choosing questions relevant to the issues that the respondent was raising at the time. Notes were taken (written adjacent to the appropriate question) and later more formally written up.

When reading the chapters that follow, it should be remembered that this relatively unstructured and unspecific approach to data gathering produced a great deal of

data not merely appropriate to a study of MWS, but of the respondents' environmental attitudes and values generally. Even when a response specifically referenced an identified wetland, the use of wetlands as a 'case study' environment for the investigation of general environmental views would be entirely appropriate in Newfoundland, given the wetland coverage of the island. Further, and while wetlands in Newfoundland may not be an economic resource comparable to the fisheries, they allow a discussion of ethics that informs models for resource use generally.

In addition to the interview, respondents were given a questionnaire to complete (or completed, previously mailed questionnaires were collected, see below). The questionnaire (see appendix 2), based on one designed by Gagnon-Thompson and Barton (1994), was used to quantitatively identify the respondents' environmental value orientation, that is, anthropocentric or ecocentric tendencies, and degree of apathy toward environmental issues, and was also used to gather demographic data. These results could then be compared with, and grounded in the context of responses given during the interview. It was deemed important to distinguish between motives behind expressed environmental concern since ecocentric individuals will tend to protect the environment even if their actions involve discomfort, inconvenience, and expense that may reduce their material quality of life, and they are more likely to express concern for the environment regardless of the economic value that it may hold. The net result is more conserving behaviours and support for the environment among those who are ecocentric as opposed to those who are anthropocentric (Gagnon Thompson and Barton, 1994). The distinction is important for identifying the strength of commitment to environmental issues and, crucially, in predicting when environmental attitudes will be translated into

pro-environmental behaviour. It was pertinent to the study of the effects of stewardship to identify whether or not the MWS programme has fostered values of intrinsic rewards of nature, rather than those for human comfort that may be counter productive if the wetland no longer provides these comforts.

3.1.2 Selection procedure

In addition to interviewing 'stewardship leaders' and / or 'community leaders' (e.g., councillors, economic development officers), thirty members of each community were interviewed for the purpose of ascertaining the effects of the stewardship programme. The objective was to choose respondents randomly and sample a representative cross section of each community. Each entry in the telephone book for the four communities was numbered and fifty community members were selected, to allow for refusals, using random tables. The 200 selected community members were then contacted by mail, explained the purpose of the research, and invited to complete the enclosed questionnaire. They were also informed that they would be contacted by telephone with a view to arranging an informal interview. In each community, a local assistant was hired to make contact by telephone with each community member. This was done to increase levels of acceptance, since the size of the communities meant that many who were contacted were already familiar with the assistant and because it was anticipated that having a fellow community member invite randomly selected respondents would raise acceptance rates, ensuring a more random sample. The assistant was also employed, having been briefed, and having attended a number of interviews conducted by the principal researcher, to conduct interviews with respondents who felt uncomfortable

talking to a stranger, and to complete the interview process in each community as time dictated. Assistants conducted approximately 25% of the interviews in each community.

Where a selected community member either refused to participate in the study or no longer lived at the address listed in the telephone directory, community members continued to be randomly selected as above until 30 participants were enlisted. While acceptance rates in each of the four communities exceeded 60%, the prevalence of incorrect directory listings meant that between 60 and 80 individuals had to be selected in order to obtain 30 interviewees in each community.

3.1.3 Problems associated with achieving a random sample

A number of problems were encountered with this selection strategy, which compromised its random component. First, the popularity or familiarity of the local assistant likely affected the inclination to participate. For example, the acceptance rate in Parsons Pond was greater than 80%. Further, those who were more interested in wetlands' issues, and particular demographic groups may have been more likely to participate. For example, the number of middle-income respondents interviewed in Glovertown appears to be greater than that which a completely random selection would identify. However, because questionnaires, containing demographic information were most often mailed to the researcher post-interview (see below), fieldwork had been completed when such anomalies were identified. Further, a higher percentage of males than females was selected, primarily due to the tendency for telephone directories to list the male head of household. These pre-selection problems, however, are a typical consequence of social science research (Kellert, 1996).

A further problem was encountered regarding respondents returning questionnaires. Only a small minority had actually completed the mailed-out questionnaire at the time of the interview and, where respondents had not completed or received the questionnaire, they were left with a copy to fill out and mail back to the researcher. Those who did not complete and return the questionnaire, or returned an incomplete questionnaire, were contacted only once, with the result that, of the 120 respondents interviewed, only 83 questionnaires were returned complete. Fewer still completed the section concerning demographic information, creating problems ascertaining the degree to which the sample was representative of a cross-section of each community.

3.1.4 Requirements for ethics in research

Memorial University of Newfoundland (MUN) requires this research to comply with its Policy on Ethics of Research Involving Human Participants. This policy is in compliance with Canada's Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans, and ensures that all research protects the rights and welfare of participants. Before this research began, therefore, approval was obtained from MUN's Interdisciplinary Committee on Ethics in Human Research (ICEHR). In order to obtain approval from ICEHR, the researcher was required to submit details of the research, including its methods and investigative tools. Conditional to approval was the requirement that all participants were informed of the nature of the study, the protection of their anonymity, and their right to withdraw any or all of the information given during the interview process or by way of the questionnaire. Each respondent was required to sign a form consenting to their participation in this research (see Appendix 3).

3.2 Study Community Profiles

3.2.1 Gambo

Gambo (Figures 3.2 and 3.3), population 2,084 (2001), is located adjacent to the Trans Canada Highway, approximately 285km from St. John's, in a richly forested river valley in Freshwater Bay, eastern Newfoundland (see Figure 3.1). It is approximately 50km from the urban centre of Gander (pop. 9,651 in 2001). Formerly there were three distinct communities - Dark Cove, Middle Brook, and Gambo - that amalgamated in 1980 to form one incorporated municipality of Gambo.

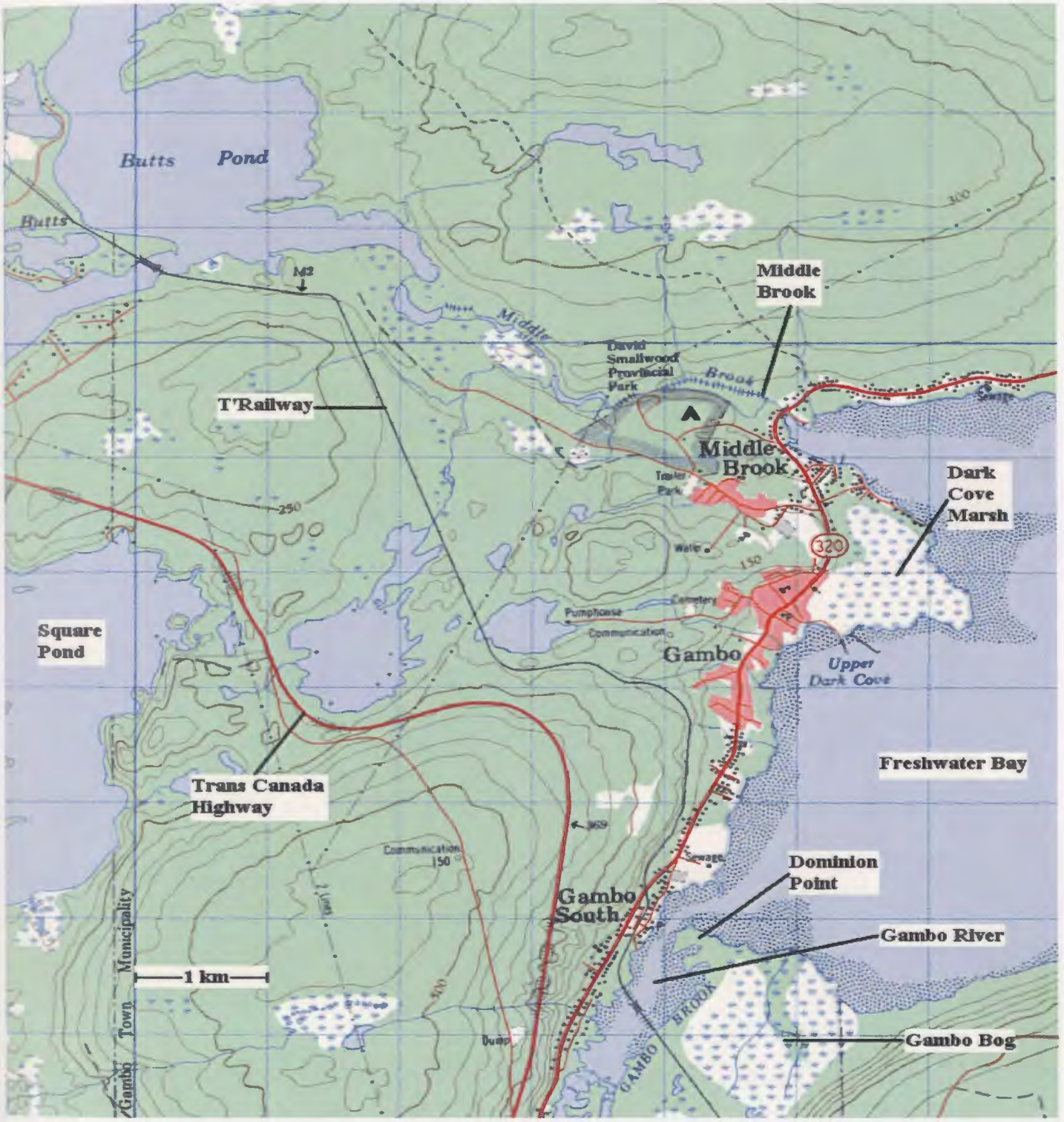
While predominantly settled by fishers, historically the town also took advantage of its local lumber resources, and the immediate environment also supported some farming activities. However, Gambo has not had a large-scale lumber industry since the early twentieth century and logging for the Corner Brook and Grand Falls pulpwood industry ceased altogether after forest fires in the vicinity in the 1960's (Smallwood, 1981). The construction of the Newfoundland railway in the late nineteenth century helped develop Gambo into an important administrative and service centre for the Freshwater Bay area. The three rivers feeding into Freshwater Bay, Traverse Brook to the north, Gambo River to the south, and Middle Brook that flows through the centre of the town, originally supported a significant salmon fishing industry, and now provide a base for a sports fishery for tourists in addition to local subsistence use. Tourism has indeed become an important employer in the town, as this is the birthplace of Joey Smallwood, the first premier of the province and the man who led Newfoundland into confederation with Canada in 1949. Tourist developments around Smallwood's legacy have been a major thrust of the town in recent years, and attractions include The Smallwood Museum

Figure 1: Location of Studied Communities

Figure 3.2: Photograph of Gambo

View from Gambo South looking northeast across the mouth of Gambo River to Freshwater Bay. The northern edge of Gambo Bog lies on the right middle ground, and leads to Dominion Point.

Figure 3.3: Topographic Map of Gambo and Vicinity



Murphy Hotel, Joey's Lookout on the Trans Canada Highway, and staged events around the J. R. Smallwood Holiday Weekend in August. The historic trend of moving to Gander to seek employment still continues, although community members are now more likely to commute (Gambo Community Leader No. 1).

3.2.1.1 *Wetlands* (see note 1)

At the time of conducting fieldwork, the town was still considering the adoption of the stewardship agreement (subsequently signed, in 2001), which was to include all undeveloped land in the municipality's boundaries. The following include wetlands deemed important in managing the stewardship agreement, and those most frequently arising in discussions with the sampled respondents in this study (see note 1).

The shallow areas around Freshwater Bay, as well as bogs, brooks and ponds in the municipality provide nesting and staging areas for Canada geese, Brant geese, black duck, common goldeneye, common merganser, and ring-necked duck. Gambo Bog, at the south-eastern edge of the town, is bisected by the Newfoundland 'T'Railway' (the disused railway bed has been developed into a multi-use trail) and provides nesting habitat and migratory feeding grounds for a number of geese. At the north end of the bog area, a boardwalk extends to Dominion Point around the shores of Freshwater Bay. There are also trails around Middle Brook, in David Smallwood Provincial Park. Other wetlands in the community include the various coastal marshes of Freshwater Bay, particularly at Dark Cove. Further west of Gambo, the bog and fenland areas around Square Pond are popular for moose hunting and salmon fishing, and are also used for wood-cutting (see Figure 3.3).

3.2.2 Glovertown

Glovertown (Figures 3.4 and 3.5), population 2,163 (2001), is located around the shoreline of Alexander Bay, approximately 265km from St. John's, 70km from Gander, and 18km southeast of Gambo (see Figure 3.1). Never possessing a significant cod fishery, Glovertown was originally settled to exploit the salmon resources of the Terra Nova River and the nearby timber resources. The latter later supported a small-scale boat building industry and supplied lumber for the railway and pulp and paper industry in Grand Falls. Glovertown also established itself as a service and transportation centre for the Bonavista Peninsula and outer islands of Bonavista Bay by the early twentieth century. Many families from the islands of Bonavista Bay were resettled in Glovertown in the 1950's and 1960's. The creation of Terra Nova National Park in the 1950's provided added economic spin-off that increased in importance when, as in Gambo, commercial logging ceased after the major forest fires of the 1960's (Smallwood, 1981). Currently the town has three tourist accommodation facilities and provides retail outlets and restaurants to visitors.

3.2.2.1 *Wetlands*

By far the most noteworthy wetland area in Glovertown (in terms of choice of discussed wetland by the sample) is Ken Diamond Memorial Park (KDMP), covering approximately 7 square kilometres. KDMP lies within the municipal boundary and is accessed from the town centre (see Figure 3.6). It consists of approximately 3.5km of trail and boardwalk systems in an area comprising lichen woodland dominated by spruce and reindeer lichen, fen areas fed by Beaver Pond Brook, dominated by sedges and grasses, and a bog area dominated by ericaceous shrubs and larch (Dicks et al., 1998).

Figure 3.4: Photograph of Glovertown

The population of Glovertown is concentrated around the shores of Alexander Bay. This view is from Glovertown South, looking north across the bay.

Figure 3.5: Topographic Map of Glovertown and Vicinity

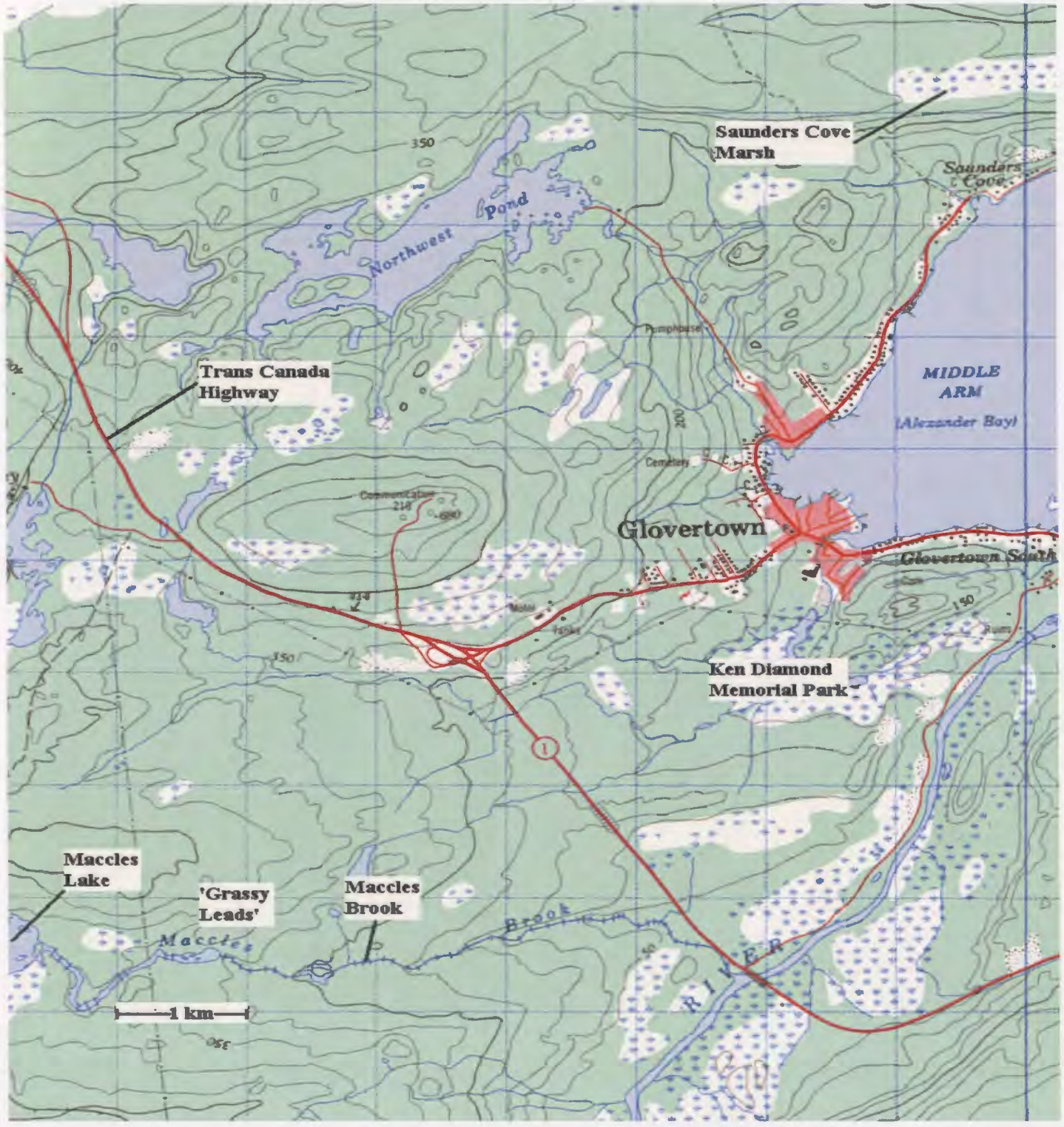
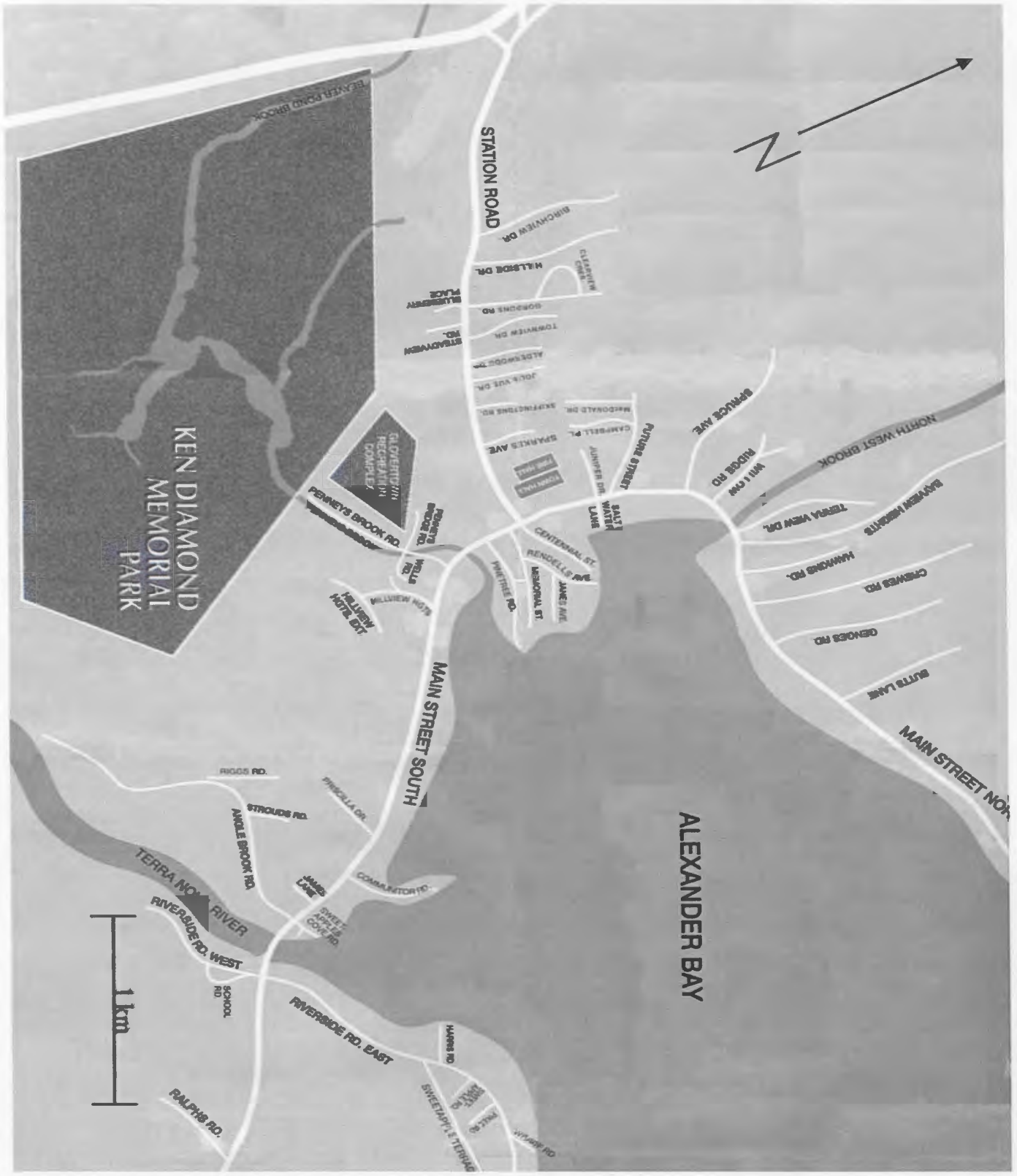


Figure 3.6: Location of KDMP in Glovertown



The fen areas feed Penney's Brook at the edge of the park, which flows northwest into Alexander Bay. The system of trails includes observation points and seating areas, interpretive signs, and points of interest celebrating the heritage of Glovertown. The locally highly publicised development of the area to a park was made possible by a donation of $500,000 in 1996 by the nephew of the late Ken Diamond of Glovertown. The park belongs to, and is maintained by, the town, relying entirely on its citizens, and organised committees thereof, to make decisions pertaining to the park.

Other wetlands discussed include Saunders Cove 'Marsh', a bog and popular cabin area, also providing some moose hunting opportunities. The bog and fenland areas around Maccles Lake, however, are the most popular hunting areas. The sloping grassland and bog areas extending east from the lake, approximately 5 km along either side of Maccles Brook, known as 'Grassy Leads', provide an abundance of caribou and geese, and are also used for salmon and trout fishing, and wood-cutting (see Figure 3.5).

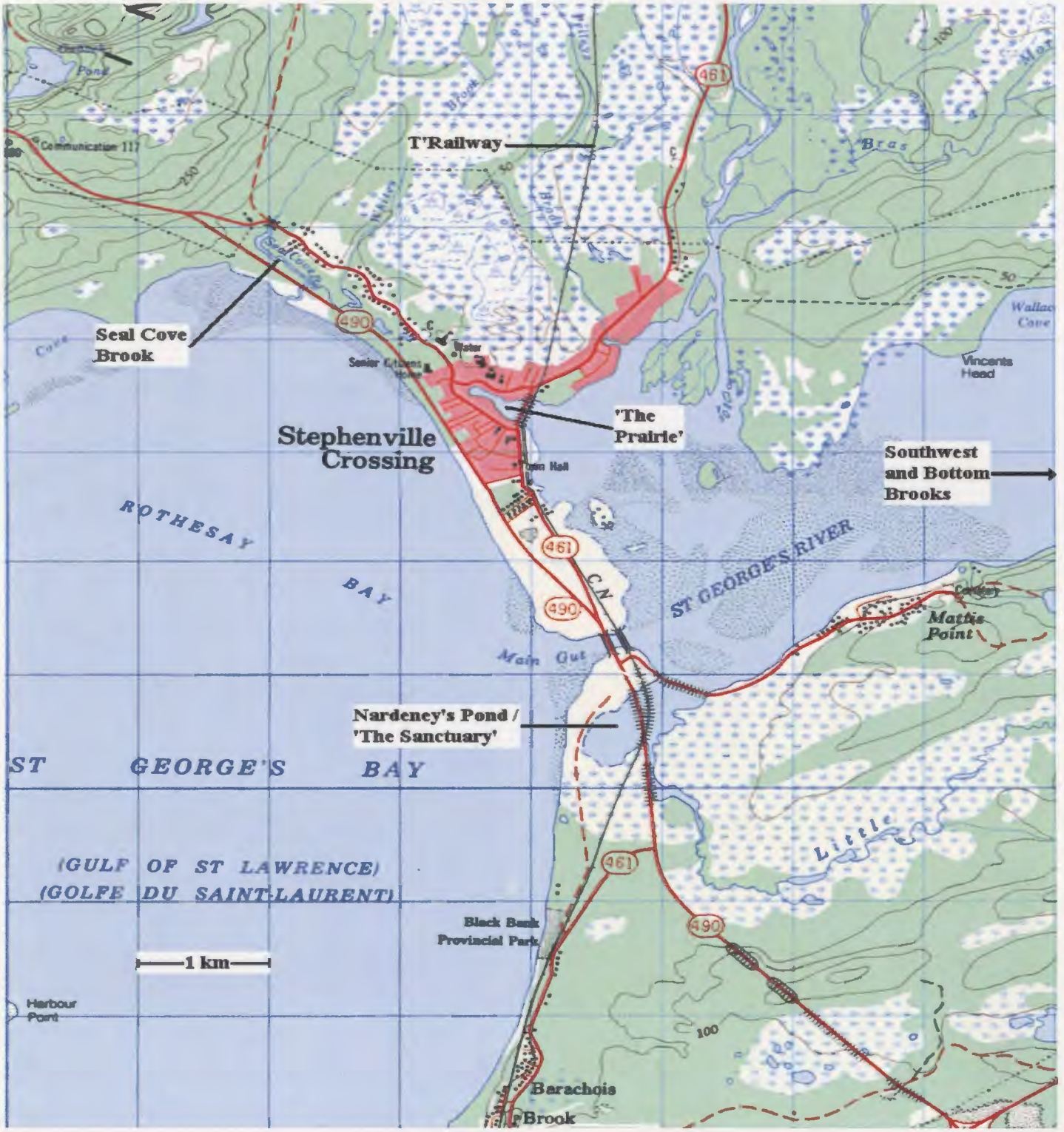
3.2.3 Stephenville Crossing

Stephenville Crossing (see Figures 3.6 and 3.7), population 1,993 (2001), is located on St. George's Bay, near the eastern edge of the Port au Port Isthmus on the west coast of Newfoundland, approximately 790km from St. John's and within 10km of the urban centre of Stephenville (pop. 7,109 in 2001) (see Figure 3.1). First settled as a farming community, and later a centre for loggers and railway labourers, the town owes its name and existence to the location of the railway junction for Stephenville and the Port au Port Peninsula (www.k12.ca/assumption/history.html). The town also benefited from being the health care centre for Stephenville and region (Smallwood, 1981). In addition to the railway, the opening of a pulp and paper mill in Stephenville provided employment

Figure 3.7: Photograph of Stephenville Crossing

Southeast view of the community of Stephenville Crossing at the mouth of the St. George's River, and showing the sandy beaches of St. George's Bay in the foreground.

Figure 3.8: Topographic Map of Stephenville Crossing and Vicinity



after 1925. The development of the US Air Base at Stephenville during World War 2 meant that Stephenville Crossing became an important transhipment point for mail, supplies, and travellers (Smallwood, 1981). The Air Base significantly benefited Stephenville Crossing economically until its closure in 1966. The employment impacts of its closure, followed by the relocation of the hospital to Stephenville and closure of the railway in 1988 were only partially offset by the construction of the Labrador Linerboard mill (now an Abitibi Consolidated paper production mill). In addition to employment at the mill, and at the town's College of the North Atlantic campus, Stephenville Crossing continues to rely on other sources of employment in nearby Stephenville, seeing itself more as a dormitory or retirement community rather than attracting industry itself (Stephenville Crossing Stewardship Leader No. 1). The community also benefits from passing tourist traffic attracted to the beaches and 'The Sanctuary' (see below).

3.2.3.1 *Wetlands*

An MWS agreement was signed by the town of Stephenville Crossing in April, 1995, and incorporates 11,559 acres of wetlands in the municipality, of which 3,526 acres make up the management zone, deemed as the most critical wetland habitat (see appendix 4). The town council plays a key role in the functioning of the agreement – six of the councillors at the time of the fieldwork were also members of the Stephenville Crossing Environmental Conservation Committee. The agreement has been kept in council hands and separate from the issues of that committee (Stephenville Crossing Stewardship Leader No. 2).

Located on St. George's Bay, the stewardship area possesses an expanse of sandy beaches and salt-water marshes, the most noteworthy being the shallow estuarine waters

of Nardeney's Pond, traversed by the disused Canadian National Railway 'Gut Bridge', within walking distance from the centre of the community. The area is locally known as 'The Sanctuary' due to hunting regulations imposed (the original proposal to protect the waterfowl in the area that were not already protected by provincial hunting legislation pre-dated the stewardship agreement). The enormous number of bird species seen in the area has attracted the attention of bird enthusiasts as far away as the U.S. (Stephenville Crossing Stewardship Leader No. 2). While plans for the construction of boardwalks, interpretation sites, and observation points have yet to materialise, the old railway bed provides a ready-made trail for visitors and walkers or birdwatchers in the community.

At the time of the fieldwork, the town plan had not been amended since the signing of the agreement. However, the municipal shoreline is already recognised by the council as sensitive, and is protected from backfilling and construction. Since the town imposed new regulations in June 2000, ATVs may only be used on the T'Railway itself.

Also part of the agreement is the small wetland area known as 'The Prairie', which is a brackish pond in the centre of the community. The Prairie was "one huge septic tank" (Stephenville Crossing Stewardship Leader No. 2), which the town had begun to backfill and use as a ballpark. It was a group of Girl Guides in 1994 who petitioned the mayor of the time to help protect the ducks still using that area. This led, via the involvement and under the guidance of the EHJV, to restoration of the area to its original pond / marsh state. The backfill has been moved to increase the open water, used to contour the riparian zone, and to allow the planting of trees and shrubs, which provide waterfowl and wildlife cover (www.gov.nf.ca/tcr/wildlife/ComProfile/StephenvilleCrossing.htm). Subsequently, trails,

footbridges, observation points, and nesting boxes have been constructed, and it has become "the major focus of the (stewardship) agreement" (Stephenville Crossing Stewardship Leader No. 2). Also in the community is Seal Cove Brook, flowing past the old people's home into St. George's Bay, and creating swamp areas that provide habitat for birds and other wildlife.

The large expanses of wetland areas outside of the community, particularly the ponds, bogs and fenlands to the east of the community, between Bottom and Southwest Brooks, which feed into St. George's River, provide popular moose and duck hunting locations.

3.2.4 Parsons Pond

Parsons Pond (Figures 3.8 and 3.9), population 427 (2001), is situated approximately 10km north of Gros Morne National Park on the Great Northern Peninsula, and approximately 760km from St. John's (see Figure 3.1). It is isolated from major urban centres: Deer Lake, 120km south, represents the closest large community (pop. 4,769 in 2001); Corner Brook (pop. 20,103 in 2001) is a further 50km to the southwest. Parsons Pond was originally a fishing and lobster settlement. Lobster fishing remains an important employer in the town, and is now supplemented by some tourist services, primarily in the form of two outfitting businesses and a boat tour operation. However, Parsons Pond has not been able to exploit the expansion in tourism to the Peninsula to the same degree as nearby Cow Head or Rocky Harbour. There is one modest tourist accommodation facility in Parsons Pond, compared with 16 in Rocky Harbour and 3 (including a 55 unit establishment open year round) in Cow Head.

Figure 3.9: Photograph of Parsons Pond

Fishing boats, stages, and storage buildings on the banks of the Parsons Pond River. Only the lobster fishery remains as a significant employer in the community.

Figure 3.10: Topographic Map of Parsons Pond and Vicinity

Interest in exploiting the oil resources in the vicinity of the community began as early as the nineteenth century. Renewed interest, since the late 1980's, culminated in an information and mining session held at Cow Head by the Department of Mines and Energy in April 1998 (Red Ochre Regional Board Inc., 1998). While there have been some encouraging drilling results, currently there are no plans to begin oil production (Parsons Pond Community Leader No. 1).

3.2.4.1 *Wetlands*

Notable wetland areas in the community of Parsons Pond include 'The Shoals', the estuarine marshes, frequented by a number of duck species, at the edge of Parsons Pond River close to the centre of the town, and the freshwater marshes around Moulting Pond. There is an expanse of domed bog areas interspersed with small bodies of standing water or 'flashetts' west of Moulting Pond and lying around the large Parsons Pond that shares its name with the town and feeds Parsons Pond River. These areas provide moose and duck hunting, and eel and salmon fishing. Parsons Pond is an important staging area for a large number of migratory waterfowl. Further out of town, and east toward the Long Range Mountains, 'Inner Leads' or 'Five Mile Exit' are the local names used for a vast bog and fenland terrain. This area is popular for cabins, and is known locally for its abundance of moose and caribou, ducks and geese, as well as salmon in the feeder rivers (see Figure 3.7). Although paved or unpaved roads run close to the wetland areas close to the community, access to them is not facilitated by way of any trails or boardwalks.

3.3 Demographic Data

Table 3.1 shows selected 2001 Canadian Census population and income characteristics for the four study communities, together with comparative survey data gathered from this study.

3.3.1 Representivity of the sample

Comparative demographic data are limited due to the lack of returned questionnaires (83, representing 69% of the interviewed sample), and demographic questions left blank by respondents. In particular, data on levels of household income are the least available of the demographic data (48%) due to the selection of the 'prefer not to say' option available to respondents. Figures above each sample category for each community indicate the number of responses in that category. Due to changes in Statistics Canada reporting for population distribution by age in the 2001 Census and, to date, no reporting of household incomes by range, it is not possible to assess the representivity of the sample in terms of these demographic characteristics. Insofar as education levels can be compared, since Census Canada employs slightly different categories than those used in the questionnaire, and only reports education levels of those aged up to 64 years of age, the levels of the sample appear representative of the population. The presence of a number of university graduates (all under 65) among the Parsons Pond sample, where none are reported in the 2001 Census, can plausibly only be a result of those respondents lying, moving out of the community, or dieing between the time of the fieldwork and the taking of the census. Due to the sampling procedure described in section 3.1.3 (above), an unbalanced gender sample, in favour of men, resulted.

Table 3.1: Selected 2001 Census Population and Income Characteristics, and Comparative Community Sample Data

	Gambo		Glovertown		Stephenville Crossing		Parsons Pond	
	2001 Census	Sample (20)	2001 Census	Sample (27)	2001 Census	Sample (20)	2001 Census	Sample (16)
Land Area (Sq. Km)	92.07		70.18		31.20		12.63	
Population	2,084	N/A	2,163	N/A	1,993	N/A	427	N/A
% change 96-01	-10.9	N/A	-5.6	N/A	-12.7	N/A	-19.4	N/A
91-96	-6.3	N/A	+0.7	N/A	+5.1	N/A	-8.3	N/A
Gender		(30)		(30)		(30)		(30)
Male	49%	60%	49%	77%	49%	83%	51%	63%
Female	51%	40%	51%	23%	51%	7%	49%	37%
Age		(20)		(25)		(20)		(15)
18-35	N/A	10%	N/A	8%	N/A	5%	N/A	20%
36-50	N/A	25%	N/A	20%	N/A	45%	N/A	27%
51-69	N/A	55%	N/A	64%	N/A	45%	N/A	47%
70+	N/A	10%	N/A	4%	N/A	5%	N/A	7%
Education Level		(18)		(25)		(20)	-	(13)
Less than high school	42%	50%	36%	32%	42%	45%	76%	69%
High school graduate	21%	11%	17%	20%	13%	10%	8%	15%
Trade diploma or certificate	21%	11%	23%	4%	26%	25%	12%	-
College dip. or certificate	8%	N/A	10%	N/A	10%	N/A	4%	N/A
University without degree	N/A	17%	N/A	4%	N/A	15%	-	N/A
University graduate	9%	6%	14%	28%	9%	5%	-	15%
Post graduate	N/A	6%	N/A	8%	N/A	-	N/A	-
Unemployment Rate	26.8%	N/A	25.7%	N/A	32.8%	N/A	63.6%	N/A
Income From Gov't Transfer	33.5%	N/A	31.7%	N/A	36.9%	N/A	49.9%	N/A
Household Income		(11)		(20)		(14)		(13)
Under 30,000	N/A	27%	N/A	5%	N/A	57%	N/A	85%
30,000-59,999	N/A	55%	N/A	85%	N/A	36%	N/A	15%
60,000-89,999	N/A	9%	N/A	5%	N/A	7%	N/A	-
Over 90,000	N/A	9%	N/A	5%	N/A	-	N/A	-
Median	27,326	N/A	30,067	N/A	21,250	N/A	22,683	N/A

3.4 Economic Climate

Community population data from the 2001 Census illustrate that all four communities experienced a population decline during the period 1996-2001. These declines are most significantly a direct result of outmigration (rather than high mortality or low birth rates) and, when combined with higher than national average unemployment, lower income levels, and greater reliance on government transfer payments, reasonably reflect the overall economic climate of rural Newfoundland.

Both Parsons Pond and Stephenville Crossing have significantly lower median household income levels than the other two communities. While the Parsons Pond levels are not the lowest, it is useful to consider other indicators in order to obtain a more accurate picture of the economic climate in Parsons Pond relative to the other three communities. The make-up of households may distort this figure (according to the 1996 Census data category that is not yet available for the 2001 Census, there are more multiple family households) since it possesses the lowest individual incomes, exhibit the highest incidence of low income (1996 figures only available), and is the most dependent on government transfer payments. Additionally, Parsons Pond appears to be the least sustainable (the most threatened) community, as measured by outmigration rates. Its population not only declined over both census periods, but dropped by over 19% between 1996 and 2001, reflecting the constrained economic opportunities for members of the community. The unemployment rate of nearly 64% is by far the highest of all communities, being almost twice the level of the next highest rate of unemployment found in Stephenville Crossing. Moreover, the perception of a community in decline, or lack of economic confidence, is likely fuelled by the fact that in such a small and tight

knit community as Parsons Pond, most residents will be at least acquainted with, and aware of each person moving out. Also of note is that, unlike the other three communities where primary natural resource occupations were rare, more than half the respondents in Parsons Pond, who provided this information, worked at occupations such as woodsman, fisherman, or hunting guide.

Notes

1. 'Significant' wetlands, that is those that are included in the community descriptions, are deemed so by the frequency by which they were discussed in each community sample, or they were identified by local 'experts' not selected for the study sample (such as conservation officers, or others frequently mentioned by the sample as knowledgeable on wetland issues) as ecologically or otherwise important. Local names used for the areas mentioned frequently differ from those appearing on published maps. Further investigation, by way of visiting the wetlands, and conversations with local 'experts' grounded the information provided by the sample.

Chapter 4: Results and Discussion

4.1 Chapter Overview

This chapter concurrently presents and discusses selected quantitative and qualitative data gathered by interviews and questionnaires in the four communities. The initial focus is a presentation of the one-dimensional data, for example, the reasons wetlands hold value for the members of these communities, the manner in which people use them, their 'environmental values', and their stances on particular issues such as tourism use of natural areas and the use of all-terrain vehicles (ATVs). Stance on economic development at the expense of the wetland, and articulation of concern for pressures and threats to the wetland are employed as measures of environmental concern. These levels of concern are subsequently compared with various data categories, such as use, or manner of perceived value in the wetland, in order to identify trends in outcomes or consequences (for the wetland, or natural environment generally) associated with such variables. The extent to which 'environmental value' orientations, that is eco- or anthropocentrism, predict levels of environmental concern in the four communities is identified, as are significant 'non-environmental values' and commitments, such as socio-economic (economic trade-off stance), cultural and political stances (for example, perceptions of authority and regulations, and desire for decision-making autonomy).

While employed to reveal trends that are explored further, the statistical significance of the quantitative data is limited due to the small sample sizes of each community, and is considered ancillary to the subsequent discussion of the qualitative interview data.

Separate discussions of each community highlight such issues as the ethical consequences of appreciative use by way of identifying the goals sought and values associated with facilitated appreciative access to wetlands, and the values that the MWS programme encourages. The data gathered in Parsons Pond, the most distinct community in terms of population, isolation, economy, and use of the wetlands, provide the basis for a more thorough discussion of one community's environmental ethics, drawing conclusions that exemplify the need for a better understanding of local systems of resource use, and the ethics underlying those systems. Finally, this chapter draws together the data pertaining to MWS, and appreciative and hunting use of wetlands, considering the environmental constituencies associated with each, and the applicability of the normative ethics' assumptions made regarding uses, their influence on environmental concern, and association with value orientation.

4.2 Utilities Associated with Wetlands

The range of reasons for the respondents' chosen wetland possessing value were identified from each respondent's uses for that wetland and reasoning for their preference for that wetland to remain preserved or expression that it is an asset, where applicable. These reasons are referred to as 'utilities', and all perceived values of, and uses for the wetland, whether or not a respondent actually undertakes those uses, are included.

4.2.1 Categorising utilities responses

Following identification of the respondents' perceived utilities, each utility was then classified. The classification system, together with examples of responses falling into each category, is shown in Table 4.1.

Table 4.1: Classification of Utilities

A. Relational, Psychological or Intrinsic	The wetland is valued because of the derived psychological benefit of the wetland, or the knowledge that the wetland exists, including explicit reference to feelings or emotional responses, otherwise similarly relating to nature, or an indication that the wetland should be preserved for its own sake. E.g., "I get a feeling of reward out there all alone. It is important to know it is there"; "walking through wetlands has a peace and tranquillity with it that you can enjoy."
B. Wildlife	The wetland is valued because it provides habitat for wildlife, where wildlife is valued of itself and not primarily for hunting purposes. E.g., "Yes, (it is important to preserve the wetland) for wildlife if nothing else"; "(It is an asset because) birds nest there, (it is important to preserve the wetland) to maintain the bird population", where that respondent is neither a hunter nor cited hunting as a utility.
C. Continuity	The wetland is valued because it possesses unelaborated importance as part of the heritage of the area, has always been part of the community, or is considered unique. E.g. "(The wetland) should stay as it has been for thousands of years"; "I don't like to see the landscape change, I like things left as they are."
D. Natural Functions	Recognition of the ecological importance of wetlands, excluding "for wildlife", but including natural functions that benefit humans. E.g., "Yes, (it is important to preserve that wetland) for the importance of the wetland ecosystem. We cannot live without other species"; "(It is an asset because) the bog helps the water in the ponds."
E. Appreciative Use	The wetland is used for, or cited as valuable for reasons such as walking and hiking, or reference is made to its aesthetic quality. E.g. "Yes (it is important to preserve the wetland), if only for walking and looking"; "It (the wetland) is interesting for children, they can study insects and see plants."
F. Unelaborated Social Benefit	The wetland has social value because it is a meeting place or provides the opportunity for families to spend time together, not merely possessing hunting or recreational benefit. E.g. "(The wetland is an asset because) it gets families out of the house and spending time together"; "It is a place to interact with other people."

Continued...

Table 4.1 (Continued)

G. Direct, Tangible Use	The wetland is used for, or cited as valuable for consumptive reasons such as hunting, fishing, and berry picking, and concern for its value to wildlife is at least implicitly linked to such uses. Included also are mechanised uses such as for ATV's (all-terrain vehicles) or ski-doos, and / or the wetland is used as a pathway or crossing point by this method of transport. Other tangible benefits include school uses for education, but exclude direct economic benefit. E.g., "(The wetland is an asset) for moose hunting"; "(The wetland is worth preserving) for wildlife, ducks, geese, moose" where these were cited as resources linked to hunting activities.
H. Economic Value	The wetland is valued because of its economic value such as its status as a tourist attraction. E.g. "(The wetland is an asset) for tourism, one of the most important things is to cater to tourists"; "It (the wetland) provides free recreation. You can leave the house and don't need any money."
I. No Utility	The wetland is perceived to be unimportant and possesses no value to the respondent or other member of the community.

4.2.2 Results

Table 4.2: Percentages of Cited Utilities by Categories

	A. Relat'l, Psych'l or Intrinsic	B. W'life	C. Con'y	D. Nat. Fct'n	E. App. Use	F. Unelab. Social Benefit	G. Direct, Tangible Use	Ga. Cons. ex. berry pick'g	H. Econ. Value	I. No Utility
Gambo	6 (20%)	11 (37%)	3 (10%)	14 (47%)	10 (33%)	0 (0%)	29 (97%)	14 (47%)	2 (7%)	1 (3%)
Glovert'n	10 (33%)	11 (37%)	4 (13%)	13 (43%)	23 (77%)	3 (10%)	24 (80%)	18 (60%)	13 (43%)	1 (3%)
Steph. Crossing	6 (20%)	16 (53%)	3 (10%)	10 (33%)	27 (90%)	3 (10%)	25 (83%)	14 (47%)	12 (40%)	0 (%)
P. Pond	2 (7%)	1 (3%)	5 (17%)	5 (17%)	6 (20%)	0 (0%)	29 (97%)	28 (93%)	4 (13%)	1 (3%)

Table 4.2 shows the prevalence of each cited utility for each community. Bracketed figures indicate the percentage of respondents who cited each utility and total greater than 100% in each community as most respondents cited more than one category of utility. The results are shown with an additional sub-category, 'Ga', of direct, tangible use, representing only hunting and fishing.

The results indicate a broad range of values associated with local wetlands. Every category is represented in all communities except Gambo and Parsons Pond, where the utility of 'unelaborated social benefit' was not cited. Examining patterns of category choice between the four communities, Parsons Pond responses exhibit the greatest variation. The only utility of significance in this community, that is, was cited by more than 20% of its members, is tangible and direct benefit, made up almost entirely of hunting use. At least 80% of respondents in all four communities identified such a benefit, making it the most commonly cited utility in all communities except Stephenville Crossing. However, when the consumptive category is reduced to include only hunting and fishing, only Parsons Pond remains at this level. Responses from this community also differ noticeably by citing intrinsic, natural functions, appreciative use, and wildlife values less than the other three communities. However, it may be misleading to suggest that residents of Parsons Pond do not value wildlife for its own sake. It is not possible, from the data alone, to ascertain how many of the 97% of residents in this community citing consumptive use as a value of the wetland would also refer to the importance of wildlife regardless of their benefit in terms of hunting value to the community.

Gambo respondents too exhibit a degree of variance to the overall pattern, tending less to cite appreciative use and economic value of the wetland. Thus, Glovertown and

Stephenville Crossing exhibit the most similar patterns of perceived utilities. In particular, the appreciative and economic value categories are significantly more highly represented in these communities' responses.

4.3 Use of Wetlands

This step refines the above identification of general utilities to discuss only those uses that are actually undertaken by the respondent, rather than a perceived utility that may accrue to someone else or to non-human nature.

4.3.1 Categorising responses

Following Hendee (1969), Dunlap and Heffernan (1975), and others, respondents are categorised as appreciative or consumptive users, or non-users. The category of combination users, included here, represents those who participate in both appreciative and consumptive uses. Table 4.3 additionally reports a further, 'mechanised only', use category representing those that use ATVs and ski-doos on the wetlands, and report no other use. Those categorised as 'mechanised only' did not expand their answers sufficiently to ascertain whether they undertake these uses for appreciative purposes or kill-extraction, or merely use the wetland for crossing to other destinations. Thus, such users cannot satisfactorily be categorised as either appreciative or consumptive. Where appreciative and / or consumptive users also report using ATVs or ski-doos on the wetlands, these respondents are only categorised as appreciative and / or consumptive, despite their use of motorised vehicles. Respondents who have previously used the wetland area but, for whatever reason do not currently, are categorised as non-users. It is possible that a number of respondents who use wetlands for consumptive purposes also

use them appreciatively; while undertaking these consumptive uses they "just like being out there" (Gambo Respondent No. 1). A number of the sample did respond in this way and are categorised as 'combination users'. However, where no such reference is made, respondents are categorised as 'consumptive only' along with those who indicated that they would not use the area if there were no hunting, or similarly consumptive opportunities.

There are data on the direct uses the wetlands have for 117 of the 120 respondents. The remaining 3 respondents are excluded because one respondent visits an area but did not state his / her purpose, one respondent lives on a wetland, and one visits the wetland only because that is where his / her cabin is located. Results are shown in Table 4.3.

4.3.2 Results

Table 4.3: Uses of Wetlands by Categories

	Appreciative Only	Consumptive Only	Combination	Mechanised Only	Non Users
Gambo	4	13	4	2	5
(n=28)	(14%)	(46%)	(14%)	(7%)	(18%)
Glovertown	16	8	4	0	2
(n=30)	(53%)	(27%)	(13%)	(0%)	(7%)
S. Crossing	17	4	6	0	2
(n=29)	(59%)	(14%)	(21%)	(0%)	(7%)
P. Pond	0	19	2	0	9
(n=30)	(0%)	(63%)	(7%)	(0%)	(30%)

It is clear from comparing Table 4.3 with Table 4.2 that in all four communities more people perceive appreciative and consumptive benefits than actually undertake such activities directly themselves. This remains the case for both types of users when combination users are double counted with both appreciative and consumptive users.

There is a comparatively high degree of consumptive use in Parsons Pond (19, or 63%, of the respondents are solely consumptive users and a further 2 combine this with appreciative uses) where, in total 21 (70%) of the respondents use the wetlands for consumptive purposes. Further, there is an extremely low level of appreciative usage, with only 2 (7%) respondents combining appreciative and consumptive use, and not one Parsons Pond respondent visiting the area for appreciative use only. This is in comparison to Gambo where 17 (61%) use the area consumptively and 8 (29%) respondents use the area appreciatively (these figures include 4 who use the area both consumptively and appreciatively), Glovertown, where 12 (40%) use the area consumptively and 20 (67%) use the area appreciatively (4 both consumptively and appreciatively), and Stephenville Crossing, where 10 (35%) use the area consumptively, but only 4 (14%) for consumptive purposes alone, and 23 (79%) use the area appreciatively, 17 (59%) exclusively for this purpose.

The lower levels of both consumptive utility and use in Glovertown and Stephenville Crossing are most likely a result of the tendency for these communities' members to choose KDMP and 'The Sanctuary' as the wetland with which they are most familiar. These two wetland areas are primarily used for appreciative recreational activities and indeed restrict consumptive uses (particularly hunting) by prohibitions (berry picking and fishing continue to be undertaken, and some hunting activities appear to be carried out in wetland areas further back from the residential areas of Stephenville Crossing, and thus allowable under provincial hunting regulations, but were described by respondents as part of 'The Sanctuary'). Between these two communities that possess wetland 'parks', patterns of both utilities cited and uses undertaken exhibit the greatest

similarities. However, despite also possessing wetland trails close to the community, there is not as high a prevalence of appreciative use or utility in Gambo.

4.4 Environmental Values (Questionnaire Data)

The data presented in this section are gathered from the 82 returned values' questionnaires. Responses are scored on a Lichert Scale 1-5, where the score of 1 is attributed to a 'strongly disagree' response, and 5 to a 'strongly agree' response. The total of 29 questions is made up of 12 that measure the respondents' degree of ecocentrism, 8 the degree of anthropocentrism, and 9 the degree of apathy toward environmental issues. Averages in each value category are arrived at by dividing the sum of the scores by the number of questions relating to that category. Therefore, a score of 5 for a respondent in the ecocentric category would represent a respondent who strongly agreed with all questions in that category, and tends most strongly toward ecocentrism. Similarly, scores of 5 would indicate the strongest degrees of anthropocentrism and apathy for responses in these categories.

4.4.1 Results

The average ecocentric, anthropocentric, and apathetic scores of the sample, and between communities, are shown in Table 4.4, normalised in Table 4.5.

Table 4.4: Overall and Community Averages

	Ecocentric	Anthropocentric	Apathetic
Gambo	4.24	3.32	2.39
Glovertown	4.19	3.36	2.20
Steph. Crossing	4.46	3.47	1.82
Parsons Pond	4.44	3.48	2.27
Community Average	**4.33**	**3.40**	**2.17**
Individual Average	**4.31**	**3.40**	**2.17**

Table 4.5: Normalised Community Averages

	Ecocentric	Anthropocentric	Apathetic
STDEV	**0.14**	**0.08**	**0.25**
Gambo	-0.67	-1.09	0.90
Glovertown	-1.04	-0.61	0.11
Steph. Crossing	0.93	0.81	-1.42
Parsons Pond	0.78	0.89	0.41

Table 4.5 suggests that the community members of both Stephenville Crossing and Parsons Pond exhibit a higher valuation of the natural environment, both ecocentrically (+0.93 and +0.78 respectively) and anthropocentrically (+0.81 and +0.89) than those in Gambo and Glovertown. Stephenville Crossing exhibits a significantly lower degree of apathy (-1.42) than the other three communities, particularly Gambo (+0.90).

The appearance of Stephenville Crossing and Parsons Pond community members valuing the environment more in both anthropocentric and ecocentric terms is not necessarily illogical or an indication of the unreliability of the questionnaire scores. The

questions tend not to be so confining as to only allow one of two extreme ways to value the environment. That is, most of the questions do not restrict the respondent to perceiving one or the other of intrinsic or utility value in nature. An individual can value nature for both reasons, and reflect Barret and Grizzle's (1999) pluralistic values (although it is important to note that a high ecocentric score indicates that the respondent would feel that nature is worth preserving regardless of whether or not it directly benefits that respondent). Thus, when respondents are said to tend strongly toward anthropocentrism, this refers to the tendency to perceive utility value in nature, but this would only be at the expense of intrinsic value – and constitute an individual that might be described as 'anthropocentric' - when high anthropocentric scores are combined with relatively low ecocentric scores.

It is reasonable to argue that the data suggest that the natural environment is valued comparatively more by the members of the communities of Stephenville Crossing and Parsons Pond both in terms of the benefits it conveys tangibly and in terms of its intrinsic worth. Some respondents articulated these dual values, for example juxtaposing moral arguments with economic values:

Interviewer: *If a proposal was put forward to fill in and develop that wetland in a manner that would be of economic benefit to the community, would you support or oppose that development?*

Stephenville Crossing Respondent (No. 10): *Oppose it. Birds have just as much right to be there...but to sustain this* ('The Sanctuary') *we need an economic base.*

Interviewer: *If the wetland did not benefit you or the community, would you still think that it is important to preserve it?*

Gambo Respondent (No. 10): *It's part of our region. It would be negative to destroy something that is part of our area, but if a use was economically positive, I would consider this effective use.*

These questionnaire results are further utilised below to compare value orientations with interview derived attitude, value, and use categories.

4.5 Choice of Preservation or Non-Preservation: General and Trade-Off Responses

Between communities, only Parsons Pond (60%) exhibits less than 90% of respondents perceiving preservation of their chosen wetland as important, as shown in Appendix 5.1. However, this general tendency to express support for the preservation of the wetlands may indicate little about the depth of the respondents' attitudes toward the wetlands since the question is not posed in any specific context, and does not imply that these communities will all work to preserve the wetlands under any circumstances.

The trade-off question sought to frame opinions regarding the preservation of the wetlands in an economic context, offering an economic incentive at the expense of the wetland (see semi-structured interview questions, Appendix 1), since it is economic forces that, above all else, underlie environmental conflicts. Survey results from research elsewhere suggest that environmental concern is widespread, but inaction is the norm due to the cost of engaging in pro-environmental behaviours (Gagnon Thompson and Barton, 1994). Similarly, the overall general tendency, found in the data, to want the wetlands to be preserved is not mirrored when such a question is posed in a specific context, that is, in the context of the opportunity cost relinquished through preservation. Table 4.6 shows the responses to the economic / environment trade-off question posed to the sample.

4.5.1 Categorising trade-off responses

Where respondents specifically stated that the development could go elsewhere, these responses are categorised with those who declined the trade-off, since it is not clear whether the latter also consider (although did not state) that such a development could be placed elsewhere and wish their chosen area to remain protected. Since respondents were asked to speak of a specific wetland area rather than wetlands in general, stances pertaining to the specific protection of one wetland area remain in the same category.

The trade-off question was introduced after the beginning of the study in Gambo and, while respondents not posed this question were contacted by mail, 7 did not reply. Hence data are missing for these 7 Gambo respondents.

4.5.2 Results

Table 4.6: Economic Trade-Off Responses

	Trade-off accepted	Trade-off declined	Don't know
Gambo (n=23)	11 (48%)	11 (48%)	1 (4%)
Glovertown (n=30)	7 (23%)	19 (63%)	4 (13%)
Stephenville Crossing (n=30)	10 (33%)	16 (53%)	4 (13%)
Parsons Pond (n=30)	25 (83%)	3 (10%)	2 (7%)

In Glovertown and Stephenville Crossing respondents tend to decline the economic trade-off in favour of preservation of the wetlands (63% and 53% respectively), while Gambo respondents were evenly split. Among Parsons Pond respondents, however,

there is a very strong tendency to accept the economic trade-off (83% as opposed to 10% who decline).

The responses to the general question about the importance of preservation to the sample, compared with those to the trade-off question, display the importance of posing attitudinal questions, and analysing responses in more specific contexts. In addition, prior to this question, respondents were asked whether or not they would oppose the construction of a building on or adjacent to the wetland, with no further context presented. Responses to this general question differed significantly from the subsequent question relating to a specific development that would bring employment to the community. Opposition to development of the wetlands decreased when an economic incentive was introduced, since the trade-off question forced the respondents to attend to specific consequences of preservation. In rural Newfoundland, these consequences may equate to continuing economic hardship and outmigration:

Interviewer: *If a proposal was put forward to fill in the wetland and develop the area, in a manner that would be of economic benefit to the community, would you support the venture, or still feel the wetland should be protected?*

Stephenville Crossing Respondent (No. 5): (Has a son who had just graduated university) *I don't like that people can't stay at home, but you can't destroy it. It is a deep question. I feel that if we do that, then we have nothing. I'm for finding a job somewhere else when you can always come back.*

Gambo Respondent (No. 3): *Preservation would be nice, but with unemployment in this region at the rate it is now, I would prefer to see development.*

Interviewer: *How important do you think it is to protect the wetland for future generations?*

Parsons Pond Respondent (No. 26): *Yeah, I'd like to keep everything the way it was, I guess, but if it was outweighed by jobs...anything that can provide a job should be done.*

Despite the question requiring, what was for many, a difficult either / or response, few refused to take a stance, and only one respondent expressed the opinion that this question presented a false dichotomy between the economy and the environment:

Interviewer: *If a proposal was put forward to fill in the wetland and develop the area, in a manner that would be of economic benefit to the community, would you support the venture, or still feel the wetland should be protected?*

Stephenville Crossing Respondent (No. 10): *This trade-off set is not real. There are some things unique here, but we need to economically sustain this place. Yes* (I would support the venture), *but we don't need that* (manner of development) *to go into wetlands.*

4.6 Relationship Between Environmental Value Orientation and Trade-Off Decision

Given that ecocentrism implies the choice of preservation of the natural environment regardless of the economic value that it may hold, and that the anthropocentric position includes such a manner of valuation, it was expected that those exhibiting stronger ecocentric orientations would tend to choose to decline the trade-off, and vice-versa. Similarly, those that are less apathetic toward issues of the natural environment would be expected to tend to decline the trade-off.

4.6.1 Results

As shown in Table 4.7, the expected correlation between trade-off response and ecocentric orientation, is consistent among Gambo, Glovertown, and Stephenville Crossing respondents. Trade-off acceptors in these three communities all exhibit lower ecocentric scores than decliners, and in Glovertown and Stephenville Crossing this group also exhibit stronger anthropocentric orientations. Similarly, trade-off acceptors are more apathetic than those who declined the trade-off.

In Parsons Pond, acceptors exhibit ecocentric and anthropocentric scores comparable to all of its community members, likely because so few declined the trade-off. Given that ecocentrism is associated with broader concern for environmental quality (both in theory and reflected in the above data for Gambo, Glovertown, and Stephenville Crossing), and that Parsons Pond respondents as a whole exhibit comparatively high ecocentric scores, these results suggest that it is *despite* ecocentric orientations in Parsons Pond that trade-offs are accepted by members of this community.

Table 4.7: Comparison of Value Scores and of Trade-Off Decisions

	Ecocentric	**Anthropocentric**	**Apathetic**
Gambo			
STDEV	0.48	0.49	0.84
Accept	-0.63	-0.02	0.32
Don't Know		Lack of Data	
Decline	0.40	0.02	-0.20
Glovertown			
STDEV	0.42	0.79	0.67
Accept	-0.80	0.23	0.32
Don't Know	-0.72	-0.08	0.31
Decline	0.46	-0.08	-0.19
Steph. Crossing			
STDEV	0.45	0.89	0.54
Accept	-0.53	0.36	0.78
Don't Know	0.28	-0.37	-0.79
Decline	0.21	-0.06	-0.28
Parsons Pond			
STDEV	0.34	0.65	0.50
Accept	-0.02	0.11	-0.04
Don't Know		Lack of Data	
Decline		Lack of Data	

4.7 Perceptions of Authority, Autonomy, and Regulations

This section links the data gathered regarding views of decision-making authority, autonomy, and environmental regulations, in order to examine their relationship with local attitudes and local decision-making, and their consequences for stewardship or co-management initiatives. For example, if the essence of good stewardship is the acceptance of responsibility (Roach, 2000), then the effectiveness of such a model would be informed by the level of desire for local autonomy over the natural environment.

4.7.1 Choice of level of decision-making authority and involvement in decision-making

Appendices 5.2 and 5.3 show the samples' preferred level of decision-making authority for the wetlands, willingness to involve themselves in the decision-making process, and past or present involvement in environmentally-related activities.

4.7.1.1 *Categorising Responses*

The decision-making authority level data are drawn solely from responses to the question: "What level of authority do you think should be primarily responsible for making decisions pertaining to that wetland?" Respondents specifically choosing either federal or provincial government are grouped together as 'government level' since frequently no distinction was made between levels of government. The 'no choice' category includes those who responded 'nobody', 'don't care', or 'don't know' to the above question. Data on the samples' willingness to involve themselves in the decision-making process are simply derived from 'yes', 'no', or 'don't know' responses to the question "Would you be willing to be involved in the management of that wetland?" 'Environmental activities' include general pro-environmental practices, such as recycling,

in addition to activities specific to the local wetlands, such as bird counting, clean-up, or involvement in its management.

4.7.1.2 *Results*

Among the four communities, only Gambo exhibits a majority (53%) choosing the government as their preferred level of decision-making authority for the wetlands. Respondents in the other three communities tend to choose local level or a combination of local and government levels. Stephenville Crossing respondents, in particular, appear to most strongly favour local level (53%).

Although such a question was not specifically asked of the samples, unsolicited opinions reflecting a resentment of government resource management, or general perception of mismanagement of resources, such as "The government manages resource very poorly. Look at the fishery" (Gambo Respondent No. 13) were scarce. However, some respondents did expand on their answers to allow the identification of their motivations behind their choice of government level. While there are insufficient numbers within each community to make these motivations statistically valid, it is informative to report them, since these choices are not only based on perceptions that the government represents the most effective level of management. They are also motivated by perceptions that the government should be responsible for funding such initiatives, and merely because respondents are apathetic toward wetland management issues, as well as the enforcement power that the government hold in comparison to local level management.

The data gathered regarding the samples' willingness to be involved in decision-making suggest that the majority of respondents in all communities would be prepared to

be involved in decision-making. That some degree of partnership with, or consultation by government authorities is deemed important by the samples is encouraging for stewardship and other participatory management initiatives. It is recognised that it is easier to respond 'yes' to such a question than actually move to act, and respondents may feel obliged to respond affirmatively. Indeed, a minority in all communities except Glovertown actually are, or have been involved in environmental activities. However, qualitative responses, even in Parsons Pond, where respondents appear least prepared to involve themselves in the management of wetland resources (60%), do often include expressions of independence and awareness of the worth of their own knowledge:

Interviewer: *Do you think that the current level of protection is sufficient, insufficient, or too stringent?*

Parsons Pond Respondent (No. 3): *I'd like to see more protection, but I don't want to see some bureaucrat who's never stepped on a marsh telling us what to do. It has to be thought out really carefully.*

Interviewer: *Who do you think should be responsible for managing that area?*

Parsons Pond Respondent (No. 24): *People here know more about the area than someone else. They should listen to the people who know.*

Interviewer: *Do you think that the current level of protection is sufficient, insufficient, or too stringent?*

Parsons Pond Respondent (no. 5): *I don't agree with the ATV bog rules. You can't compare us with someone in St. John's. It's responsible here.*

Finally, the lower level of interest expressed by Parsons Pond respondents to involve themselves in the management of the wetlands in the interview responses needs

to be considered in the context of the qualitative data. The view that human management is an unnecessary interference arose:

Interviewer: *How do you feel about initiatives to increase fish and wildlife use of the wetland?*

Parsons Pond Respondent (No. 21): *The wildlife does fine by itself.*

Parsons Pond Respondent (No. 10): *Nature should take care of it. Leave it as it is, don't go tampering with it. When you start to change the course of nature you know what happens.*

4.7.2 Relationship between involvement in environmental activities, and trade-off decisions and value orientations

As a test of the attitude-behaviour connection, that is, between trade-off stance and involvement in environmental activities, the relationship between these two variables is shown in Appendix 5.4.

4.7.2.1 *Results*

The relationship between trade-off stance and involvement in environmental activities is inconsistent between communities. In Gambo, 100% of those involved in such activities expressed concern for the wetlands by declining the trade-off, compared to 20% of those not involved. This compares with an even split between acceptors and decliners in the community as a whole. However, in Glovertown, Stephenville Crossing, and Parsons Pond there is little difference in acceptance rates between those involved and those not involved, both groups mirroring closely the responses the community samples as a whole.

Although there is a correlation between involvement in environmental activities and trade-off stance in Gambo, this is not the case with willingness to be involved in the

management of the wetlands (see Appendix 5.5). There is little difference between the ratio of trade-off acceptance and declination between the samples of the community as a whole and those that stated their willingness to be involved in the management of the wetlands. This is similarly the case in Parsons Pond, Glovertown, and Stephenville Crossing. Although those in the latter community who would not involve themselves in the management of the wetlands were 3 times more likely to accept the trade-off than decline it, the number constituting this group is too small to suggest a strong association.

The data in Appendix 5.6 also suggest inconsistent results with regard to the value orientations of those who are, or were previously involved in environmental activities, and those who are not and never have been. Those involved in such activities are more ecocentrically oriented in Gambo (+0.58) and Stephenville Crossing (+0.33), but less in Glovertown (-0.19) and Parsons Pond (-0.15). This group is more anthropocentrically oriented in Parsons Pond (+0.17) but less so in the other three communities. However, as one would expect, in all four communities, those that are involved in environmental activities are less apathetic toward environmental issues than those not involved.

In terms of the value orientations of those that stated they are willing to participate in the management of the wetlands, the results are more consistent but the differences are generally insignificant. These respondents tend to value the environment slightly more in both terms, and are less apathetic in all communities.

4.7.3 Perceptions of rights to the commons and environmental regulations

It has been suggested that Newfoundlanders possess a historically developed attitude that access to and exploitation of natural resources is their right (Omohundro, 1994; Felt and Sinclair, 1995c). Interviews were therefore analysed for evidence that

respondents exercise little or no self-regulation as users of natural areas and accompanying resources. Evidence for exploiting them accordingly, failure to recognise the need for regulation, or perceptions that current regulations are too stringent was sought.

4.7.3.1 *Categorising Responses*

Respondents' perceptions of environmental and resource regulation and enforcement are drawn primarily from responses to the question "Is the current level of protection sufficient?" but also from other unprompted responses, for example, references of concern for poaching and irresponsible users of natural areas. Care has been taken over responses to specific questions structured as "Should the area be protected from (e.g. ATV use, drainage and filling, or hunting)?" since these responses often contradict earlier statements and imply leading the subject. However, where a respondent had been prompted in this way to consider specific threats and expanded on answers (rather than a simple 'yes' to such questions), these answers have been included. This approach particularly applies to ATV use, as this seemed to be a fairly contentious issue and of interest when it was mentioned. The number of times this was raised unprompted, or expanded upon when specifically mentioned by the interviewer, indicates the importance of this issue to respondents.

Where the only data available for respondents are statements that the protection of the area is "sufficient" or the area "does not need it (protection)", these are not categorised. While it is possible that many of these respondents responded in this way due to a resentment of regulations *per se*, or merely due to lack of concern for the area, it is also true that areas such as KDMP are currently, relative to other community wetlands,

stringently protected, and a sufficient or similar answer may not necessarily reflect apathy or resentment of those rules, rather a confidence in them. Also excluded from the figures are those who stated that they do not know whether or not there was any kind of protection and thus could not comment on whether or not this was sufficient.

4.7.3.2 *Results*

Table 4.8: Perceptions of Regulations and Enforcement Levels

	Perception of insufficient regulation / enforcement	**Perception of too much regulation / enforcement**
Gambo (n=15)	12 (80%)	3 (20%)
Glovertown (n=15)	15 (100%)	0 (0%)
Steph. Crossing (n=17)	15 (88%)	2 (12%)
P. Pond (n=17)	11 (65%)	6 (35%)

Table 4.8 suggests that, while the importance of access to, and use of the local natural environment is evident from the interview data analysis, there does not exist a perception that such access is too restricted or regulated. Indeed, quite the contrary appears to be true, with a majority of the respondents in all four communities, who possess an identifiable stance on the issue, perceiving the presence of insufficient regulations or enforcement measures. Only in Parsons Pond (35%) do more than 20% of respondents perceive the current regulations as too stringent.

4.7.3.3 *Poaching and Rights to the Commons*

The perception of rights to the commons, appears to be somewhat tempered by the perception of needs for regulations with regard to hunting practices. The need for better enforcement of hunting regulations and bag limits is the most common misgiving with levels of regulation:

Interviewer: *Do you think that the current level of protection is sufficient or too stringent?*

Gambo Respondent (No. 2): *There should be more enforcement of bag limits. There's a balance required.*

Parsons Pond Respondent (No. 5): *It's not too bad...there's not enough game wardens. There's too much poaching...from people around here. People don't know what the regulations are, some people do it (poach), some don't. There's no enforcement.*

Yet there were also instances of responses that appear to reflect Okihiro's (1997) views that poaching is tolerated in rural Newfoundland and seen as a legitimate right when motivated by the need to gain subsistence, but condemned when it constitutes irresponsible practice:

Interviewer: *Do you have any other comments?*

Glovertown Respondent (No. 29): *Self-regulation does work here because people have seen the problems that can happen. That's the majority anyway, there's always a few. Everyone knows a poacher but tolerates it. From time to time everyone buys some moose or something from a poacher.*

Interviewer: *Do you think that the current level of protection is sufficient, insufficient, or too stringent?*

Stephenville Crossing Respondent (No. 10): *You can't see the presence of officers; it's mainly a community effort. I would report a poacher unless he needed it to support his family...Why do it* (poach at 'The Sanctuary')*? How much meat is on a duck? You don't need that to survive.*

Further, the community oriented perception of common resources is limited by the guarding of knowledge about best hunting places. Hunters' comments suggest a sense of ownership over their favoured places:

Interviewer: *How do you feel about initiatives to educate and promote awareness of the wetlands within the community?*

Gambo Respondent (No. 4): *People should be more aware. Too many people abuse it, are ignorant. If I told people about where I go I would go back there next year and there wouldn't be any fish left.*

4.7.4 Relationship between perceptions of regulations and trade-off decisions

Appendix 5.7 examines the relationship between perceptions of the sufficiency of locally relevant environmental and resource regulations, and trade-off responses. Only in Gambo does the ratio of acceptance to declination of those perceiving insufficient regulations differ significantly from the ratios exhibited by the overall community samples. In this community, 11% of those perceiving insufficient regulations accept the trade-off, compared with 78% who decline, and compared with an even split exhibited by the Gambo sample as a whole.

4.8 Recognition of Conflicts of Use and Pressures on the Natural Environment

This section attempts to identify the samples' perceptions relating to the possibility and potential consequences of over exploitation of natural resources.

4.8.1 Categorising responses

Respondents are categorised as: specifically articulating a recognition of little or no human pressure or threat to the wetland and exhibiting evidence of a frontier model (a perception of limitless resources); making no specific references either way regarding

conflicting uses and concern thereof; or specifically articulating a concern for the presence of human pressure, real threats and conflicts of use.

Since respondents were given ample opportunity during interviews to refer to these pressures or threats (that is, there are a number of questions that might stimulate respondents if they were of concern), those who made no such references are included in the figures. However, these respondents are reported in a separate category from those who specifically made references indicating a frontier model stance. For example, responses such as "The place is covered in bog land, why do we need to protect any of it" are categorised as perceiving lack of pressures or threats, while the merely apathetic: "It's not important to protect it" would be considered in the 'no reference' category. Arguably, however, those who made no such references might be considered as more likely to perceive a lack of pressures or threats.

4.8.2 Results

Table 4.9: Perceptions of Conflicts of Use and Pressures on the Natural Environment

	Specifically refer to a perceived lack of pressures or threats	No references to pressures or threats	References to pressures or threats
Gambo (n=30)	6 (20%)	15 (50%)	9 (30%)
Glovertown (n=30)	5 (17%)	14 (47%)	11 (37%)
Steph. Crossing (n=30)	3 (10%)	21 (70%)	6 (20%)
Parsons Pond (n=30)	13 (43%)	8 (27%)	9 (30%)

The results shown in Table 4.9 indicate some evidence of a frontier model perception in responses. In all communities, a minority of respondents specifically articulated a recognition of pressures, threats and / or conflicts of use over the wetland areas they discussed or the environment generally. In Gambo, Glovertown, and Stephenville Crossing either a majority or the largest single group of respondents made no specific reference but, as suggested above, this may be more likely to indicate a perception of a lack of pressure than its presence. In Parsons Pond a large minority and the largest single group (43%) specifically articulated a perception of lack of such pressures or threats to their local natural environment.

It is difficult to assess the significance of the data regarding references to pressures and use conflicts in the wetland areas. Although respondents were given ample opportunity to discuss these issues, and related questions were posed, this question was not specifically asked. Wall (1995) suggests that Canadians, as a whole, have historically developed an expectation of limitless resources. In specific reference to rural Newfoundland, Omohundro (1994) found comparable perceptions on the Northern Peninsula where residents believe that their activities have little influence on, for example, species populations. There was little specific indication in this study that living through the experience of a resource crisis (1992 Northern Ground Fish Moratorium) had affected such perceptions. However, while only a minority expressed a perception of the presence of threats and pressures to the environment, these results are somewhat contradicted by views regarding regulations and enforcement. The latter results imply that community members are concerned about abuse and over-exploitation of those environments, and would welcome steps to provide for increased protective measures.

4.8.3 A note on the presence and perception of threats

Gunter and Finlay (1988), and Grieshop and Stile (1989) suggest that the presence or perception of pressures and threats to the environment will foster greater environmental concern, in essence producing a reaction to protect the area in the face of a threat that is 'outside their backdoors.' It may be accurate to suggest that these data reflect a perceived lack of pressures, which, it may also be accurate to suggest, is not ill-informed. As a number of respondents in Parsons Pond indicated, there is actually little human pressure as a result of outmigration:

Interviewer: *Do you think that it is important to protect that wetland?*

Parsons Pond Respondent (No. 25): *We've got so many bogs you'd have to protect the whole Northern Peninsula. It's all bog for God's sake. There must be some way to use them.*

Interviewer: *Do you think that the current level of protection is sufficient, insufficient or too stringent?*

Parsons Pond Respondent (No. 5): *They're not too bad...not enough game wardens, too much poaching. The regulations are adequate, there's no threat, no population boom.*

The arguably accurate perception in Parsons Pond of an absence of threats appears to have fostered the view that oil development, something that would be considered an environmental threat, is in fact an opportunity. This view may not indicate a lack of concern for the natural environment in Parsons Pond, because responses must be considered in the context of the threats to the *community* that are reducing threats to the natural environment. Oil development of course provides the opportunity to counter the outmigration threat to the community's survival.

4.8.3.1 *Presence of Threats: ATV use*

Reflecting Gunter and Finlay (1988), and Grieshop and Stile (1989), what the quantitative analysis does not show was the tendency for a number of respondents to express a wish to see protection of the wetlands only when a specific threat was introduced into the discussion by the interviewer. Some respondents contradicted their earlier expressions of "no need" for protection when, for example, the high-profile issue of ATV use was brought up. Their opinions on protective measures may indeed have been influenced by the profile and perception of the existence of threats to the natural environment. This may explain the difference in the regulations and the pressures data, since the opinions that ATV regulations should be more stringent are not categorised as a threat perception.

Interviewer: *Do you know if that area is currently protected?*

Stephenville Crossing Respondent (No. 18): *You're not allowed to shoot.*

Interviewer: *Do you think that the current level of protection is sufficient, insufficient or too stringent?*

Same Respondent: *Yes, is enough. Don't want too many rules.*

Interviewer: *Do you think that wetland should be protected from ATV use?*

Same Respondent: *Yes, ban them all.*

Interviewer: *How would you feel if someone wanted to build on, or adjacent to that wetland?*

Parsons Pond respondent (No. 12): *O.k. if one outweighs the other. We would still have natural areas. There's not enough population for residential areas, not many buildings on wetlands. There's a lack of threat. The only threat is ATVs.*

Dunlap and Heffernan's (1975) study of uses of natural environments and their relationship with environmental concern notes that mechanised users, of ATVs and ski-doos, may represent a separate category and, while not specifically studying such a category, suggest that this manner of use might in fact be negatively correlated with environmental concern. Following this, Jackson (1986) found less prevalence of environmental concern among mechanised users than among appreciative users. In this study, the contentious nature of the use of ATVs is reflected in the number of respondents who made reference to the issue, and there were instances where the only strongly voiced opinions were about ATV use. However, few of the samples perceived the current regulations as too stringent, indicating a concern for the damage caused, including by those who use them.

Interviewer: *Have you noticed any change in the numbers of wildlife or waterfowl using that area in the past few years?*

Glovertown Respondent (No. 25): *No change over the last 50 years. Gone down if anything due to the accessibility of ATVs and snowmobiles. This was the beginning of significant damage.*

Interviewer: *Do you know if that area is currently protected?*

Same Respondent: *From ATV use, but there is no enforcement at all.*

Interviewer: *Do you think that the current level of protection is sufficient, insufficient or too stringent?*

Same Respondent: *It's sufficient except for ATV use.*

Interviewer: *Do you know if that area is currently protected?*

Parsons Pond Respondent (No. 10): *There's a ban on ATVs. The bogs are just ripped and not healing. They* (the regulations) *are not being enforced, people are getting braver.*

Interviewer: *Do you think that the current level of protection is sufficient, insufficient or too stringent?*

Same Respondent: *Need a little more force not to use the ATVs.*

Interviewer: *Do you think that wetland should be protected from ATV use?*

Gambo Respondent (No. 4, an ATV user): *There should be a 99% ban on ATV use, for retrieving a downed animal only.*

4.8.4 Comparison of the recognition of pressures and threats with trade-off decisions

The tendency for those who express a perception of pressures and threats to the environment to be more concerned for its preservation is tested by comparing applicable responses with trade-off decisions in Appendix 5.8.

The results between the four communities do not consistently reflect Gunter and Finlay (1988), and Grieshop and Stile (1989). In Glovertown, Stephenville Crossing, and Parsons Pond, there is little difference in trade-off stance between those who specifically referred to a lack of pressures or threats, those who referred to their presence, and those who made no references. While those who made reference to such pressures or threats are slightly less likely to accept the trade-off, generally in these three communities the ratios of trade-off stances by this variable resemble the community as a whole. Only the Gambo results differ significantly from the community's overall trend with regard to trade-off stance. In this community, respondents who referred to pressures or threats are much more likely to decline the trade-off. These results serve to illustrate how levels of environmental concern can differ by the way in which concern is measured and that this concern may be context specific, that is, is influenced by other variables (in this case economic) in different situations.

4.9 Environmental Quality as a Rural Resource: Impacts of Tourism

Related to the above analysis of conflicts of use and pressures, this section considers these in the specific context of tourist use of natural areas, since one area of potential natural resource use conflict in rural Newfoundland is the growing tourist industry. The marketing of the province's unique natural assets is one area in which rural Newfoundland can compete economically, and tourism is becoming a more important part of the rural economy. Yet, as Overton (1980) points out, the downside of expanding the tourist use of wild resources is that it can come at the expense of members of rural Newfoundland communities who use the local resources for subsistence activities that are important both economically and culturally. Both hunting as a tourist activity and the protection of natural areas for appreciative visitors may conflict with the interests of people who earn or support their living extractively from the land (Cronon, 1995).

4.9.1 Categorising responses

Table 4.10 classifies perceptions of tourism, drawn primarily from responses to the question: "Do you support the encouragement of tourist use of that wetland?" and also from other references to issues of tourism made elsewhere during the interview.

Table 4.10: Classification of Responses Referring to Perceptions of Tourist Use of Natural Areas

Impacts on own use	Respondents do not support the use of the wetlands for tourism because it would infringe on, or negatively impact their use of the areas. E.g., "No, because I believe that things should be left like it is. I would like for my grandchildren to be able to go out and hunt like I can. It seems like it is getting restricted now"; "No, it would interfere with what I go up there for, like hunting."
General ecological impacts	Respondents recognise the potential negative ecological impacts of tourism. They recognise the conflicts and need for balance with respect to tourism use. E.g., "Yes (would support tourism) for birdwatchers, though watch the interference with the birds"; "Low impact use could be accommodated by both user and wetlands"; "No. Tourists would only make it more difficult for the birds and animals to breed in this area" (where the respondent is not a hunter).
Perception of no impacts	Respondents perceive natural areas as a valuable resource to be exploited for tourism, and do not recognise or are not concerned for the potential negative impacts. Only the economic benefit of tourism is recognised and / or referred to. E.g., "It might make jobs"; "Yes. One of the most important things is to cater to tourists", or an unconditional "Yes, 100%".
Perception of no tourism value	Respondents perceive no potential tourism value to the area. E.g., "No use for tourism"; "There's nothing there to attract tourists."
No data	No response was offered, or a "yes" or "no" response was not expanded upon.

4.9.2 Results

Table 4.11 shows that in all four communities few respondents appear to perceive their local wetlands as possessing no tourism value, and, in all communities except Gambo, the majority of respondents expressed no concern over tourism impacts. Where references were made to such impacts, few respondents appear to be concerned for tourism infringing on their own use of the local wetlands. Only the Gambo (47%) and

Glovertown (41%) samples exhibit significant numbers concerned for the ecological impacts of tourism.

Table 4.11: Perceptions of Tourist Use of Natural Areas

	Impacts on own use	General ecological impacts	Perception of no impacts	Perception of no tourism value
Gambo (n=15)	2 (13%)	7 (47%)	6 (40%)	0 (0%)
Glovertown (n=17)	1 (6%)	7 (41%)	9 (53%)	0 (0%)
Steph. Crossing (n=18)	1 (6%)	3 (17%)	11 (61%)	3 (17%)
P. Pond (n=22)	2 (9%)	1 (5%)	15 (68%)	4 (18%)

Impacts on appreciative users would, by and large, be limited to sharing trails and boardwalks with more visitors (something that may not be of great concern given the positive social aspects of using these facilities, cited by some respondents), which may explain the lack of concern for such impacts exhibited by the samples of Glovertown and Stephenville Crossing, which include significant numbers of appreciative users. The perception that increased appreciative use does not carry with it any ecological impacts may be prevalent among such users, although a few responses highlight the potential impacts of appreciative use of 'The Sanctuary':

Interviewer: Would you encourage tourist use of the wetland?

Stephenville Crossing Respondent (No. 17): *Yes, it is nice for birdwatchers, although we should watch the interference with the birds.*

Interviewer: *Would you support the development of trails or boardwalks around the area?*

Stephenville Crossing Respondent (No. 11): *Yes, but not this specific area, the birds will lose trust.*

Concerns regarding tourist access are least prevalent in the highly consumptive community of Parsons Pond (14% in total). Further to the above discussion of the perception of threats, this may be expected given the extent of natural areas relative to the human population on the Northern Peninsula. Further, appreciative user disturbance, by visitors to the community, is unlikely to be a major factor in Parsons Pond since such users are likely to concentrate in nearby Gros Morne National Park. Hunters in this community may be content in the knowledge that there are sufficient wetlands' resources for both visiting tourists and locals, although a number of hunters here, and in other communities, voiced concern over potential tourist / local use conflicts, and referred to who should be given priority in terms of rights of access:

Interviewer: *Would you encourage the promotion of that wetland for tourism?*

Gambo Respondent (No. 1): *Not for tourist exploitation. It would cut down on community access and game.*

Parsons Pond Respondent (No. 18): *Tourist hunting should be in the backcountry. Leave the close resources for the community.*

When considering the attitudes toward tourism in Parsons Pond, it should be remembered that one of the few industries in Parsons Pond is hunting and fishing

outfitting. There are few other services in this community to attract tourists, despite its proximity to Gros Morne National Park. While possibly infringing on some local use, demand by tourists for hunting must be exploited to protect local jobs. Responses expressing support for tourism generally appear to be motivated more by economic concerns:

Interviewer: *Would you encourage the promotion of that wetland for tourism?*

Parsons Pond Respondent (No. 17): *Yes, it might make jobs.*

Parsons Pond Respondent (No. 13): *I think there is potential; the community would prosper quite a bit* (economically) *if we had trails and bird watching huts.*

Nevertheless, that at least 40% in all four communities foresee no potential social and environmental impacts of tourism may be significant if considered in the context of Omohundro's (1994) concern that if more access for tourists is allowed before proper management of such areas is established, resources will decline faster than current levels. At the current level, in the opinion of community members, impacts are not significant. However, specific questions involving, for example, trade-offs of personal use for tourist revenue should be posed to more accurately gauge community opinions on the issue of tourist use conflict before the level of such use significantly rises. Concepts of carrying capacity and limits may not be perceived as relevant in Parsons Pond given its level of outmigration. Tourism, however, may represent the expanding population, for whom outdoor recreation must be provided without destroying the very natural characteristics on which it depends.

4.9.3 Support for the development of trails and boardwalks

Table 4.12 shows the samples' views on trail and / or boardwalk construction around the wetlands, or expansion or additional developments elsewhere, where explicitly articulated (i.e., not merely because the respondent uses them). Data are drawn solely from responses to the question "Would you support the development of trails and boardwalks (or additional developments, including around other wetlands, as applicable) on or around that wetland?"

4.9.3.1 *Results*

Table 4.12: Levels of Support for Boardwalks and Trails

	Tend to encourage boardwalks / trails		**Tend to discourage boardwalks / trails**	
	Supports and community would use them	**Supports primarily for tourism**	**Reservations / prefer to keep to a minimum**	**No to trails / boardwalks**
Gambo (n=15)	10 (67%)	1 (7%)	3 (20%)	1 (7%)
	11 (73%)		4 (27%)	
Glovertown (n=28)	15 (54%)	1 (4%)	3 (11%)	9 (32%)
	16 (57%)		12 (43%)	
Stephenville Crossing (n=23)	14 (61%)	1 (4%)	6 (26%)	2 (9%)
	15 (65%)		8 (35%)	
Parsons Pond (n=23)	8 (35%)	4 (17%)	9 (39%)	2 (9%)
	12 (52%)		11 (48%)	

Table 4.12 shows that, in all four communities, a majority of respondents support the development of boardwalks and trails on or around the local wetlands. Fairly polarised opinions regarding the development of boardwalks are found in Glovertown, where 43% of respondents tend to oppose such developments. Support for these developments was expected, given the popularity of KDMP, but it is possible that others in the community, having witnessed the 'development' and popularity of KDMP, consider this park as providing sufficient opportunities for appreciative purposes, and do not wish such facilitation of access to extend to the wetlands that they use for hunting purposes:

Interviewer: *Would you support the development of trails and boardwalks on or around that wetland?*

Glovertown Respondent (No. 6): *No. It's best left as a natural habitat. It would become for economic value then and not for natural habitat. There would be conflict, the wrong emphasis. That's o.k. at Ken Diamond.*

These concerns were also expressed by hunters elsewhere, particularly in Parsons Pond, where the highest level of opposition to trails and boardwalks is found:

Interviewer: *Would you support the development of trails and boardwalks on or around that wetland?*

Parsons Pond Respondent (No. 5): *That's fine, if it's close to the community, although I'd rather see the money go to education. It's too easy to get to it and roads spoil it. If you can't* (are unwilling to) *get there by boat, you don't need to go there.*

Parsons Pond Respondent (No. 16): *No, because people would gain easier access to the wildlife habitation and in the end would do more harm than good for the animals. If on the other hand the welfare of the animals could be assured, I might consider boardwalks or trails.*

Opposition to trails and boardwalks is not only highest in Parsons Pond but, significantly, of those who do support the development of such facilities, it is here that motivations tend much more to be based on their potential to encourage visitors. Far fewer, as compared to the other three communities, expressed motivations based on the perception that trails and boardwalks would benefit the community members themselves:

Interviewer: *Would you support the development of trails and boardwalks on or around that wetland?*

Parsons Pond Respondent (No. 13): *That would be a good idea. Everyone would be walking around it. Not particularly the people in the community, but visitors.*

4.10 Discussion of Ethically-Relevant Issues by Community

This section draws primarily on qualitative data in order to explore themes and trends in the four communities, or found in somewhat homogenous sub-groups of these communities, suggested by the quantitative data presented above. The discussions of Glovertown and Stephenville Crossing focus on these communities' large numbers of appreciative users, and compare the values associated with KDMP and 'The Sanctuary'. In Gambo, no strong theme emerged, but in this community, there are particular points of interest relevant to the MWS initiative. Parsons Pond exhibits the most divergence (from community trends), particularly in relation to the key variables of uses and trade-off responses. The Parsons Pond discussion, therefore, provides the basis for a much deeper analysis of uses and values, and the consequences thereof.

4.10.1 Glovertown

The analysis of Glovertown focuses on KDMP, and considers not only the extent to which, and for what purpose, this wetland area is used, but also the role it plays in the

community and the influence it has, both directly and indirectly, on attitudes and values among the members of the community. Fifteen (50%) of the respondents chose this wetland as one with which they were sufficiently familiar and, of the remainder of the sample, all but 3 also use the area or made a specific reference to it. Indeed, one Glovertown respondent, when asked to speak of a wetland with which he was familiar, replied "I won't talk about Ken Diamond because everyone will have talked about that" (Glovertown Respondent No. 29). In fact, the presence of this park in the community afforded the opportunity for a far broader range of respondents to speak of a wetland with a high degree of familiarity. Among all four communities' samples, respondents' familiarity with wetlands appear to be tied closely to the extent to which they use the wetlands and, in the absence of a wetland 'park', such familiarity was only likely to be exhibited by the hunter groups. In other words, by promoting and facilitating the use of the wetland by the entire community, including senior citizens with mobility difficulties, KDMP encourages and affords the experience of a wetland to community members who would not normally experience such areas.

One consequence of this use and familiarity, as well as the involvement of the community in decisions pertaining to the park, has been the creation of a sense of ownership of the area. This is reflected in the strong tendency to choose the local level as the appropriate decision-making authority (13 of the 15, representing 87%), qualitative descriptions including "a fantastic area" (Glovertown Respondent No. 22), "positive for the community" (Glovertown Respondent No. 30), "one of the best things that happened here" (Glovertown Respondent No. 07), and an area that "we are so proud of" (Glovertown Respondent No. 19). In addition, strong protective attitudes were reflected in

responses to the trade-off. Only 20% of respondents speaking of KDMP accepted the trade-off, indicating a protective, as well as possessive attitude toward the area.

This protective and possessive attitude appears to be based on utilities that are most commonly derived from its resource value to the town for recreation. Walking and leisure-related activities are the primary reasons given for the park being perceived as a benefit. These perceived benefits extend to the physical health of the community, as respondents reported that KDMP encourages people to walk who previously would not, to education, since the area is used in school programmes, and to increased tourism. The value of KDMP to the community implicitly protects the area. Whether or not the town council designates the park as such, and restricts or forbids development in the town plan, should not concern users of the area, since its mere importance to the people of the town instils a protection arguably stronger than legislated protection. Any proposal to develop the area would likely meet with such strong public opposition that it would never make it past the proposal stage:

Interviewer: *Do you think that the current level of protection is sufficient, insufficient, or too stringent?*

Glovertown Respondent (No. 30): *That it is a park protects it implicitly from being anything else because people's attitudes to it are so positive.*

Thus, Glovertown respondents, although not members of a 'stewardship community', highlight the potential of stewardship in the way that local pro-environmental constituencies can form a force at least as powerful as legislation.

Yet the protective attitudes also appear to be specific to that park, possibly to the detriment of protecting other local natural areas. The creation of 'natural' oases within

developed areas can be employed to justify the development of other areas (Birch, 1990). Such concerns were indeed expressed regarding the 'privileged' status of KDMP at the expense of other wetlands:

Interviewer: *Do you think that it is important to preserve that wetland* (not referring to KDMP)*?*

Glovertown Respondent (No. 2): *Yes, it's been there as long as you knew it. They* (Southside of Glovertown) *have already got that place up there* (KDMP). *They* (the town council) *are not going to be concerned about it* (wetland he referred to)*, but they should be.*

And in the opinion of another resident of Glovertown, the idea of adopting MWS, as have their neighbours in Gambo, was not entertained by the community council because it felt its preservation efforts were sufficient with the creation of KDMP:

Interviewer: *Do you think that wetland* (not referring to KDMP) *is an asset, detriment, or neither?*

Glovertown Respondent (No. 18): *Asset. It should have protection but doesn't. The council thinks it has done enough with the park* (KDMP)*, but that was never a productive wetland: just a few birds, and they've driven trails through it, cut the flow and partially drained it. They should look at areas connected with the Gambo stewardship zone, but they are not interested. They point to KDMP as their protection.*

This points to an effect of the park on values that, while encouraging the pro-environmental constituencies of those who previously had little contact or knowledge of wetlands, becomes ambiguous when consideration is given to the different set of values found among those not falling into this category. The above respondent implies that the values associated with KDMP, described above, are prioritised by those with the decision-making authority (in this case, the local council), at the expense of his set of

values, predominantly associated with ecological values (and possibly too, the connection of these to hunting values). There are responses that suggest this prioritisation has caused a *change* in values, but not merely among those previously unfamiliar with, and attaching little value to wetlands:

Interviewer: *How would you describe that wetland* (KDMP)*?*

Glovertown Respondent (No. 3): *It was seen as a local wasteland. Nobody saw the value of the wetland. Now it's accessible to the public and they can appreciate it.*

Interviewer: *How would you describe that wetland* (KDMP)*?*

Glovertown Respondent (No. 4): *It was a nice spot for ducks and trout. I used to fish, and it was a nice swamp area for ducks. I was sceptical at first, but the way it is, is ideal.*

This respondent went on to describe the tourism benefits, and little else, of the area before stating that: "No (I don't visit the area). I don't hunt there anymore." The assessment of this change in attitude is highly subjective, depending on which values one chooses to advocate.

4.10.2 Stephenville Crossing

Stephenville Crossing, like Glovertown, possesses a wetland area that is a popular venue for appreciative visits. 'The Sanctuary', sharing a comparable profile in Stephenville Crossing to KDMP in Glovertown, is valued considerably by its users, and, like KDMP, while not formally protected by law, has created a force of local attitudes whereby "there's enough people here that would do a lot to stop people destroying that wetland" (Stephenville Crossing Respondent, No. 5).

Also like KDMP, 'The Sanctuary' is altered by humans but it is not 'manicured' in the sense of an intentional development into an attractive and accessible location for recreation in nature. Indeed, it could be argued that it has suffered aesthetically from the construction and subsequent abandonment of the railway. The utility gained, or experience sought from visiting this area appears to be somewhat different from visitors to KDMP. 'The Sanctuary' draws people primarily to view waterfowl, fostering an appreciation of the area founded more on the value of nature and wildlife than on recreation. This reflects the different ecological role played by 'The Sanctuary'. In terms of waterfowl use, this area *does* possess very productive wetlands. The value of 'The Sanctuary' is derived from the appreciation of waterfowl and, as such, people go there for walks but, respondents suggested, primarily to appreciate the birds. Thus, the motivation to protect the area appears to be derived from the desire to protect the waterfowl. It is not 'The Sanctuary' area that is itself important, it is the birds that are there that are valued. While this less specific manner of protective attitude would logically extend to other wetlands, it may extend only to wetlands that are perceived as important waterfowl habitat:

Interviewer: *If a proposal was put forward to fill in the wetland and develop the area, in a manner that would be of economic benefit to the community, would you support the venture, or still feel the wetland should be protected?*

Stephenville Crossing Respondent (No. 19): *Still preserved. You could develop other bogs around here and it wouldn't hurt the birds.*

Both Glovertown and Stephenville Crossing, in the contexts of their appreciatively used wetlands, share similarities in the way in which perceptions of value

in these two wetlands have not only been developed among those not previously familiar with wetland habitat, but also forced change in, or marginalised those that previously perceived value in those wetlands largely for consumptive reasons:

Interviewer: *Can you locate any wetlands close to your community?*

Stephenville Crossing Respondent (No. 4): *All of them* (listed a number of local wetlands).

Interviewer: *Is there one you are familiar with that you would like to talk about?*

Same Respondent: *The islands on the inside of 'The Gut'* (part of 'The Sanctuary). *I used to go out and shoot ducks and geese.*

Interviewer: *Do you think that area is an asset or a detriment to the community, or neither?*

Same Respondent: *Not now* (is it an asset) *there's no hunting. People who see birds now never did before. Nobody goes out there in the fall anyway* (the bird hunting season).

The same respondent went on to express the opinion that bird numbers had not increased because of the hunting ban, rather they "just come closer to the road because they have no fear" and "people just think there are more birds (naming a lot of different species) because they've been made aware of them". He dismissed suggestions that there are now more birds to hunt in other local areas, as merely a way that the proponents of MWS employ to try to placate hunters in the area. When questioned on his use of the area, he replied: "No point in going if there's no hunting. I don't go to look at the birds." However, as the interview progressed, this respondent conceded that "it was sensible" to ban hunting because of the walkers, and that it was "a nice area". Similar changes in sentiments were expressed over the course of another interview:

Interviewer: *Are you familiar with any wetlands close to your community?*

Stephenville Crossing Respondent (No. 8): *I don't use them anymore. I don't go to 'The Gut'* ('The Sanctuary'). *Used to bother me* (wetlands issues). *The rules have stopped access* (for hunting).

After expressing resentment about the restrictions imposed on ATV and hunting use of the area, and a general apathy toward questions posed regarding 'The Sanctuary', he not only conceded that the area was important for birds and wildlife, but declined the trade-off question, suggesting that it "should stay the way they've got it now". In both these cases, the initially expressed resentment toward the designation of the area as a 'bird sanctuary' appears to be a result of the perception that their own uses and values associated with the area were not incorporated into the decision-making process:

Interviewer: *Are you aware of the Municipal Wetlands Stewardship Programme?*

Stephenville Crossing Respondent (No. 4): *Yes.*

Interviewer: *Can you tell me anything about it?*

Same Respondent: *No. Nobody ever explained it. Nobody in town knows anything about it.*

While people do not necessarily need to know that they are subject to stewardship in order to become 'good stewards', and this situation does not reflect a failure of the programme in these terms, it does reflect the management of the agreement in Stephenville Crossing, which "has been kept in the hands of the (town) council" (Stephenville Crossing Stewardship Leader No. 2), raising questions about the extent of empowerment afforded to the community as a whole by the agreement.

While the creation of 'The Sanctuary' reflects its proponents interest and values in wildlife, it also compliments the vision the council has for the town as a retirement, or dormitory community for the nearby urban centre of Stephenville, rather than one that wishes to attract industry (Stephenville Crossing Stewardship Leader No. 1). The perception by local business owners that the Town Council is focusing on enhancing the natural environment at the expense of attracting new business to the area (Stephenville Crossing Stewardship Leader No. 2) is indicative of a conflict of polarised (use and non-use) values. The need to find a middle ground between the two interests can be inferred by a quote from the Stephenville Crossing respondent, who articulated an awareness of the council's objectives for the community:

Stephenville Crossing Respondent (No. 10): *It's good to enhance wetlands, but we need an economic base, you need something, like tourism, to put money back into the wetlands. What economic value does it have? We can't expand to bring in industry. The town has screwed itself. I don't think it will survive.*

Interviewer: *Do you agree with the council's view of the future of this community?*

Same Respondent (No. 10): *It's not realistic. It* (the community) *has to be developed. Any town has to think like a businessman, and think of how this* (wetlands' preservation) *could fit in. These things* (creating 'The Sanctuary') *don't work for the majority of people. There has to be enough people here to enjoy it and be caretakers of natural areas. People on welfare won't care what a wetland is. People are leaving, the kids are leaving, they have no choice.*

4.10.3 Gambo

Although possessing wetlands to which access is facilitated by the presence of trails and / or boardwalks, there were fewer respondents referring to these areas, and fewer appreciative users among the Gambo sample than found in Glovertown and Stephenville Crossing. However, the presence of consumptive user numbers more

comparable to the level found in Parsons Pond does not result in comparable economic and environmental priorities. Gambo was originally chosen in order to gather baseline data for a community at the beginning of the process of initiating the MWS programme, so that future research would be better placed to gauge the changes associated with the programme. While the original objectives of this study have changed, the discussion of data among members of this community focuses less on strong patterns (which did not emerge in Gambo as they did in the other three communities) than on outcomes, in terms of changes in values, that may take place as the MWS agreement develops.

4.10.3.1 *MWS in Gambo: Its Appeal to Values*

A strength of the MWS programme is that it recognises the diverse ways that people value the natural environment, and that support for the programme can derive from a range of values. For example, an individual does not have to place a high valuation on waterfowl to be motivated to support the protection of a critical wetland habitat; that person might focus instead on the tourist value of such a step. This mix of ecological and economic values, evident among Stephenville Crossing respondents and their ties to 'The Sanctuary', is also evident in the interviews with potential MWS leaders in Gambo (i.e., those who had been involved in the discussions with the EHJV regarding the programme's inception), and with other leaders of the community of Gambo influencing decision-making:

Interviewer: *How do you think the community will benefit from the programme?*

Gambo Stewardship Leader (No. 1): *To keep the nature that we have, and for the waterfowl that use it: the benefits of water purification, and the potential of tourism.*

Interviewer: *Why do you support the programme?*

Gambo Community Leader (No. 1): *Purely from a professional standpoint and why I am employed by this town, I am not interested in the welfare of birds. My question is, how can you make money from 800 birds? That comes with the territory.* (My support for the programme is derived from) *its economic benefits, its potential for tourism, ecotourism and interpretation.*

And it may be key to the support of the programme to present its benefits in terms of this range of values:

Gambo Stewardship Leader (No. 1): *We have to show the benefits of what the wetlands do for us – purification, pollution* (to gain support for the programme in the community). *I would never spend a lot of time on economic benefits to a general audience, but the town's mandate is to develop economically. I would emphasise this to them. If a factory was proposed which would destroy the wetland, people will say 'to hell with the birds'. People will destroy anything if they have to put food on the table but the danger exists in economic valuation, which is why the attention will only focus on this when necessary. The problem is how do we do both.*

Those in the general Gambo sample who have some knowledge of the programme hold similar views:

Interviewer: *Are you aware of the Municipal Wetlands Stewardship programme?*

Gambo Respondent (No. 30): *Yes, it's been on the radio and the community* (television) *channel.*

Interviewer: *Are you aware of its objectives?*

Same Respondent: *Yes. It's for protection for waterfowl.*

Interviewer: *Do you think the community will benefit from the programme?*

Same Respondent: *Undecided yet.*

(The above implies that protection of waterfowl is not enough, on its own, for this respondent to support the programme)

Interviewer: *Do you think the community will benefit from the programme?*

Gambo Respondent (No. 9): *It will. More species means more tourism. One of the most important things is to cater for tourism.*

4.10.3.2 *Appreciative Use in Gambo and the Potential of MWS*

Comparisons between the case of Gambo, and those of Stephenville Crossing and Glovertown, highlight the potential for changing attitudes and values towards local wetlands through MWS, particularly via creating awareness through access facilitation. The wetlands in Gambo that do facilitate appreciative use are not, unlike those in the other two communities, a major focus of the sample in Gambo. Pre-'wetland park' data are not available for Glovertown and Stephenville Crossing. However, the high profile nature of KDMP, which may be linked to the public consultation and involvement of the community in the development of a multi-use park that covers a significant area of the municipality, and 'The Sanctuary', possibly via activities undertaken as a result of the stewardship agreement and the visible traffic of birdwatchers around the area, appear to have resulted in growing awareness of the attraction of the areas to both community and visitors. Responses in Gambo suggest that the presence of trails alone does not create the use and awareness of wetlands, which later results in protective attitudes toward those areas, as illustrated among the respondents in Glovertown and Stephenville Crossing. It will be of interest to discover whether Gambo's recognition of the value of their appreciative areas will increase, and what values will increase, if these wetlands gain a higher profile through development of the stewardship agreement.

4.10.4 Parsons Pond

Parsons Pond is chosen as the focus of a lengthier discussion of influences on environmental decision-making due to the strong tendency among this community's respondents to accept the trade-off, the key indicator of concern for the wetlands. The influences discussed are the interrelating and overlapping economic, use, and ethical contexts. This discussion attempts to portray the importance of all of these contexts in the decision-making component of local ecological knowledge systems.

4.10.4.1 *General 'Non-Preservation' Trends in Parsons Pond*

In Parsons Pond, a vast majority of respondents accept the economic trade-off. Should this lead one to the conclusion that residents of Parsons Pond exhibit lower concern for their local wetlands, particularly given that this was also the only community where significant numbers indicated it was not important to preserve the area when the question was posed in a general context? If it were the case that residents perceive no reason to preserve the wetland, then there would be no conditions attached when an incentive was subsequently offered as a trade-off for preservation. This was not, however, the case since many of those who answered in the negative to the general preservation question or suggested that the wetland conveyed no benefit went on to voice some concern regarding destruction of the area for the economic good; the consequences of a development were frequently attended to:

Interviewer: *Do you think that wetland is an asset, detriment, or neither?*

Parsons Pond Respondent (No. 2): *Not much benefit.*

Interviewer: *How would you feel if someone wanted to build on, or adjacent to that wetland?*

Same Respondent: *Wouldn't bother me.*

Interviewer: *If a proposal was put forward to fill in the wetland and develop the area, in a manner that would be of economic benefit to the community, would you support the venture, or still feel the wetland should be protected?*

Same Respondent: *I suppose* (I would support it), *if it didn't harm it that much. Don't want to see it completely destroyed.*

It may be that the use of the word 'preserve' was perceived in regulatory terms, that is, protection from hunting or other such uses, or otherwise considered as outside interference. This may be inferred from responses such as those to questions of decision-making authority, in section 4.7.1 (above), and the retort "Don't bring Greenpeace around here" (Parsons Pond Respondent No. 1) to the question "Do you think that it is important to preserve that wetland?" Further, Parsons Pond respondents may consider that there is no need to legally preserve or protect an area, and limit their own and the community's use, from threats that seem, at most, distant. This community's respondents also tended to have difficulty articulating the value of the wetland to them, which is an issue that will be discussed further below.

4.10.4.2 *Economic Context*

Such is the prevalence of the Parsons Pond sample to accept the trade-off, in this community it is necessary to consider the specific context presented in the trade-off scenario, and question the role of economic incentive and environmental preference in the context of the economic climate described in a previous chapter. This is approached firstly by considering income as a predictor of environmental concern, then considering the applicability of Maslow's (1970) hierarchy of needs theory.

Income levels as a predictor of environmental concern

Research on the relationship between income levels and environmental concern provides unsatisfactory answers to the Parsons Pond situation. Income levels have been found to be poor predictors of environmental concern (Dunlap et al., 1983). In theory, any effect of income on environmental concern should be diffused further in rural Newfoundland. Two of the arguments put forward as to why higher income level might positively affect environmental concern are not applicable to rural Newfoundland communities: that higher income earners tend to enjoy the benefits of environmental quality (e.g., by cost of access, something that is not affected by socio-economic status in rural Newfoundland) and; that higher income earners may live in objectively superior environments, nurturing higher environmental expectations (again, relatively pristine environments are commonly on the doorsteps of rural Newfoundland communities).

However, when presented with such a trade-off scenario, it is difficult to imagine that respondents are not significantly influenced by the prevailing local economic climate. Intuitively an affluent town would be more likely to decline the development of an industry that the town does not need than would a very poor community. This argument is not only supported by statistical data on trade-off responses, but also further by interview responses describing motivations for trade-off choices in Parsons Pond:

Interviewer: *If a proposal was put forward to fill in and develop that wetland in a manner that was economically beneficial to the community, would you support the development or (still) wish to see the area preserved?*

Parsons Pond Respondent (No. 16): *Support it. Anything to provide jobs.*

Parsons Pond Respondent (No. 11): *If it meant jobs for the area, it would be all right.*

Parsons Pond Respondent (No. 21): *I would support it if it gave Parsons Pond jobs.*

'Hierarchy of Needs' theory

If human needs are sorted in accordance with Maslow's (1970) hierarchy, one would find that physiological needs, food, and safety (security and stability) must be satisfied before other needs, less critical to human survival, emerge, and these needs would be the main motivation if a person was missing everything in life. Accordingly, basic economic security must be met before one can develop a concern for environmental quality because values connected to the environment, such as aesthetic values, are of less importance in the needs hierarchy (Albrecht, 1975). These basic, or 'lower order' needs are relatively universal and cross-cultural, and have been of use in explaining motivations behind behaviour in the environmental context (Dunlap et al, 1983).

For this theory to explain the prevalence of trade-off acceptance in Parsons Pond, certain conditions appear to be required. First, lower order needs must be threatened, and, second, environmental quality must be perceived as a higher order need than basic security needs. Addressing the former first, while, in the modern welfare state, individual physiological needs for food and shelter would not be considered at risk, Neis et al. (2000) suggest that threats to food security may become a major issue in some coastal areas of Canada. Further, responses to the trade-off question in Parsons Pond tended to be altruistic. Nobody talked in terms of their own economic gain: almost all explicitly or implicitly referred to the need for jobs so that the community, of rapidly diminishing population, could survive. The implication is that the perception exists that the basic security and stability *of the community* are not satisfied:

Interviewer: *If a proposal was put forward to fill in and develop that wetland in a manner that was economically beneficial to the community, would you support the development or still wish to see the area preserved?*

Parsons Pond Respondent (No. 14): *Our younger people are all leaving; there would be nobody here to save it for. If marshes are destroyed to bring work, then that's o.k.*

Parsons Pond Respondent (No. 24): *No one would go against it, there's lots of room for everything. Sure, everyone wouldn't mind work to an extent. There's so many people leaving.*

Interviewer: *Would you be willing to see the wetland gone and the benefits you get from them disappear if it provided jobs?*

Parsons Pond Respondent (No. 13): *I would definitely be o.k. with taking away the benefits I get from it to provide* (future) *jobs for children.*(Gesturing toward his children) *I have four good reasons for that.*

With regard to the second condition, Albrecht's (1975) comments regarding the relative luxury of pursuing aesthetic values suggests that environmental concern is a matter of preservation of an aesthetically pleasing environment and a luxury in which only the economically secure can afford to indulge. Clearly, not every individual perceives environmental quality as merely aesthetically pleasurable, and this perception is hardly the norm in Parsons Pond. Indeed Dunlap et al. (1983) point out that Albrecht's (1975) comments were made at a time when environmental activists tended to be considerably above average in socio-economic status, and this view of 'environmental quality' was questioned:

> At the time of our study, environmental quality was seen primarily as an aesthetic (higher order) issue, and thus one appealing mainly to those who could afford the luxury of pursuing high order values...Widely publicised incidents...have made it clear that environmental problems threaten the health and well being of people, not just wildlife or the "natural" environment...Pollution control, resource conservation and other pro-environmental behaviours are being seen as increasingly relevant to the

> well-being and security of human beings, i.e. to lower order needs (p. 161).

While the importance of the subsistence economy in rural Newfoundland should not be underestimated, and most, if not every household in Parsons Pond relies to some extent on raw resources gathered from the local natural environment (Parsons Pond Community Leader No. 1), in relation to lower order needs, nobody considers it a substitute for jobs in a deteriorating economy (Omohundro, 1994). Moreover, it is the security of the community that is threatened, and, even if it were possible to forge a living off the land, "it cannot alone provide the means to live at an acceptable North American standard of material consumption" (Sinclair, 2002, p. 316), and this is unlikely to be a lifestyle that would attract young people to remain in the community.

It is reasonable to conclude that motivations behind acceptance of the economic incentive among Parsons Pond respondents are not limited to economic incentive. What might be traded for the preservation of the wetland is not merely lost revenue, but the community itself. These responses reflect Omohundro's (1994) 'deep responses' found in residents of the Northern Peninsula, which describes the desperate defence and emergency reaction that Maslow (1970) argues is produced in the face of deprivation of lower order needs. Thus, a rural Newfoundlander may react to deprivation of economic needs by leaving, or tolerate destruction of valued local wetland if it somehow secured the survival of the community.

4.10.4.3 *Ethics and Values in Parsons Pond*

Despite the influence of economic security concerns on environmental decision-making, it is argued here that there are other equally important value and ethical

influences in Parsons Pond that should not be dismissed. Assuming that environmental decisions reduce to rational economic choice, and thus concluding that residents of Parsons Pond care little for their local environs relative to economic incentive, does not relate these decisions to the moral principles that justify them, nor considers the situations in which decisions are formulated. As Berkes (1999, citing Reichel-Dolmatoff, 1976) states, "the researcher needs to study the worldview as the organising concept of the cultural ecology of a group, without which the logic of many traditional management systems would be difficult if not impossible to access" (pp. 55).

On the basis of the raw data, there appears the unexpected situation where heavily consumptive values and uses extracting direct benefit from the natural environment, and apparently low levels of concern (as measured by the trade-off responses) are found in Parsons Pond, a community that also exhibits significantly high ecocentric tendencies among its residents. If the questionnaire results are an accurate reflection of environmental value orientations in Parsons Pond, then a deeper and more complex analysis may be required to explain this apparent anomaly.

Such ecocentric scores were unexpected following interviews in Parsons Pond because ecocentrically-related statements were, at initial analysis, seldom articulated. It may be, however, that particular connections usually associated with ecocentrism, and commonly found elsewhere – descriptions of scenery and values in aesthetic qualities, and tendencies to exhibit preferences for the preservation of natural areas – are too narrow a perception of what constitutes ecocentrism, or are an urban-biased perception (of people detached from the source of their raw resources).

In Parsons Pond, the overall ecocentric tendencies appear to be as a result of the strong ecocentric tendencies of its hunters (+0.49) as opposed to its non-hunters (-0.97), (see Appendix 5.9a). From the qualitative data, it is a very difficult task to identify a number of core motivations of hunters in terms of distinct value orientations. For example, where a respondent cites the value of wildlife as a reason to preserve a wetland, and if that respondent is a hunter or otherwise discusses the importance of hunting, it is not possible to conclude that that respondent is only identifying value in wildlife so that he, she, someone else in the community, or indeed a tourist, can continue to hunt. This inability to distinguish between this manner of respondent and one who places value on wildlife for its own sake, yet is also a hunter, likely underestimates the number of respondents who do indeed intrinsically value wildlife, as reported in Table 4.2. Further, it may be that respondents do not articulate such a valuation; they feel that wildlife is important for more than just hunting, but do not talk in such terms. By examining interview data beyond dominant justifications for the value of the wetland, a fuller and more balanced picture of a person's motivations and reasoning may be obtained.

It is suggested that community members do indeed feel that they are the ecocentrically-defining 'part of nature' but merely do not express such sentiments, nor take part in the 'appreciative' activities usually associated with ecocentrism (Dunlap and Heffernan, 1975). The local environs, including the wetlands, are very often places of work, places to hunt to provide food for the winter, to cut wood to heat the home or indeed to build it. For the same reason that Ommer (2000b) provides as an explanation for houses in outport Newfoundland to be built facing away from the ocean – the ocean that is loved, but is also the place of work - why would residents walk around a wetland after

a day's work on it? That idea seemed as absurd to some in Parsons Pond as the idea of building a house without a view of the nearby ocean would be to the urban-minded city dweller. The suggestion of trails or boardwalks was most commonly met with a response that, while visitors might use it, few were of the opinion that it would be used by the community, and even fewer thought they would have a use for it themselves. While Parsons Pond residents rarely referred to the aesthetic qualities of their environment, as do appreciative users of trails and boardwalks in other communities, this does not mean they do not value such qualities. The viewpoint of the 'visitor' to nature is simple and easily articulated; the native, however, may have a far more complex attitude derived from his / her immersion in the totality of his / her environment (Tuan, 1990). Merely because those who work on the land do not articulate such sentiments, does not mean they are not profoundly aware of the beauty of their environs (White, 1995).

4.10.4.4 *Evidence of Moral Concern in Decision-Making*

The position on the trade-off that the Parsons Pond sample takes does not preclude ecocentric orientations nor the presence of ethics of concern for the environment that influence decision-making. An apparently morally contradictory proposition can be coherently maintained because, in specific contexts, a stance on a particular issue can be overridden and contradicted by other considerations (Kahn, 1999). In this case, a general ethic of concern for the natural environment may be overridden by moral concern for the community: the value judgement is dependent on the specific context. It is a case of what Kahn (1999) refers to as 'discretionary moral reasoning', where an individual's act is viewed as morally permissible, but would be better if not performed. Moral duties toward the community of Parsons Pond, or toward their children (see quote above), may simply

outweigh moral duties to the environment. Such duties toward the natural environment are not 'prima facia' exceptionless rules (Seligman, 1989), but this does not mean such duties do not exist.

As Norton (1991) points out, "it is not uncommon for people to use economic arguments and biocentric arguments in tandem. They are unlikely to see these as conflicting commitments to two opposed systems of thought such as the D.S.P. (dominant social paradigm) or N.E.P. (new environmental paradigm, see Dunlap and Van Liere, 1978). They will, rather, see their different arguments as complimentary routes to the same conclusion." (p. 96-97). Consider the following response to the economic trade-off, proposing development at the expense of a local wetland:

Parsons Pond Respondent (No. 10): *Don't think you should do anything like that, what point would there be? There might be a few jobs for a few years* (pause). *You'd lose a lot of your livelihood: moose, caribou, berries. Like that mine up there, there were a few jobs for a few years, now it's disused and it will never come back no more. I like nature to stay as it is. Longer term jobs would be o.k., like if oil was found it would be different, there'd be a lot of years of work.*

Here it can be seen that multiple values influence the final decision. There are references to the direct benefit the respondent or his community gains from the area in terms of its subsistence hunter-gatherer role, considering the importance of these in relation to economic benefits. There is also an implication of ecocentric reasoning – "I like nature to stay as it is" - alongside the more easily articulated consumptive and economic benefits. There is no blind acceptance of economic gain, but a consideration of a number of values held by the respondent that influences his decision, resulting in the attachment of conditions to the acceptance of economic benefit.

This manner of response may reflect a traditional (or local) form of stewardship. Such decisions have likely been made over the course of the community's history. Indeed, trade-offs may have been made, and the test of the community's stewardship practices lies in its resilience and ability to survive. Callicot (1984) describes the role of the steward as not primarily one of preventing individual animals from suffering, or looking out for the interests of individual plants and animals, but of preserving species, maintaining the integrity of natural communities, and ensuring the healthy functioning of the ecosystem as a whole:

Interviewer: *If a proposal was put forward to fill in and develop that wetland, in a manner that would be economically beneficial to the community, would you support that proposal or still like to see the wetland preserved?*

Parsons Pond Respondent (No. 6): *For the community I'd have to let it go. There's lots of bogs up river.*

Parsons Pond Respondent (No. 5): *Depends. We have a lot of wetlands. To fill in one acre wouldn't destroy the entire area.*

Economic values may be prioritised, but only to the point where their pursuit threatens the fragility of the ecosystem as a whole (Norton, 1991):

Parsons Pond Respondent (No. 18): *I'd support it, but all the other bogs should be protected from everything, even hunting and fishing.*

Parsons Pond Respondent (No. 19): *Support it if there were lots of other wetlands not harmed.*

These responses indicate that: a) there is sufficient land to safely sacrifice one wetland in order to ensure the survival of the community without compromising the ability of the natural environment to provide for subsistence activities at their current level and; b)

concern for wetlands is not specific to the area discussed, but a general concern for their integrity prevails: one part is sacrificed to save the whole (something which is in direct contrast to the specific nature of protective attitudes witnessed among KDMP respondents). This is not a case of 'jobs at any cost' (McBride et al., 2002), more a reflection of how survival is, and always has been, partly dependent on new opportunities to exploit the environs (Omohundro, 1994).

Arguably, trade-offs are made by the ecocentric this way: if one is *part* of nature, the question becomes one of how to make everything work around you in order to survive, placing moral importance on the natural system and the human community as a whole, not just the parts that make it up (Seligman, 1989). Indeed, if the community of Parsons Pond is considered to be part of the whole system, to decline such a trade-off would be wrong according to Leopold's (1949) *Land Ethic*, since it would tend not to preserve its integrity, stability, and beauty: it would compromise those aspects of the human community (see note 1). Or, in the presence of both ecocentric and anthropocentric value tendencies, Barrett and Grizzle (1999), might consider it an example of 'weak anthropocentrism' that combines both ecocentric and anthropocentric orientations to focus "not on immediate human gratification so much as on the satisfaction of basic needs for the whole community, present and future, and maintenance of the ecosystem of which we are part" (p. 34).

4.11 Environmental Constituency-Building by Use: MWS, KDMP and Hunting

Clearly, there exist great differences in conservation values related to the wetlands in Parsons Pond versus the other communities, most notably the perception of their

importance as recreational venues for appreciative activities. While the data suggest that trade-off responses are not due to the absence of appreciative users in Parsons Pond, those gathered from users of KDMP and 'The Sanctuary' suggest the possibility that facilitating access to the wetlands fosters a protective attitude. This carries sufficient significance for management policy that the attitudes and values associated with different uses of wetlands, and consequences thereof, require further examination.

One context for this exploration is Dunlap and Heffernan's (1975) study that found a positive relationship between participation in appreciative uses of the natural environment and environmental concern. Such a connection "could have significant implications for efforts to achieve and maintain environmental quality" (p. 19), including interventions and programmes. Indeed, the development of environmental concern in this way would appear specifically relevant to initiatives such as MWS, since promotion of the appreciative use of wetland resources is witnessed in the encouragement of the development of trails on and around participating communities' wetland environments. Accordingly, this section explores the role that use of the natural environment plays in respondents' attitudes and values toward that environment. Implicitly then, it examines the effectiveness of the approach of MWS in creating stewards partly through appreciative use of wetlands, and also the values associated with local subsistence practices.

4.11.1 Relationship between use and environmental concern

Dunlap and Heffernan (1975) measured environmental concern by asking their sample to assign priorities to competing government expenditure areas, including the protection of the natural environment and endangered species. Here, the trade-off

responses may be employed as a gauge of concern, whereby those that decline and choose preservation of the wetland are deemed to be more concerned for its well-being. Since numbers in some use categories are too small to compare the responses of different users within a community, Table 4.13 compares trade-off decisions of KDMP and 'The Sanctuary' users with other community members of Glovertown and Stephenville Crossing respectively. This lends itself to identifying if, and how, levels of concern among members of these communities are affected by using these wetland areas. Consumptive users among Parsons Pond respondents are also compared with other members of that community.

4.11.1.2 *Results*

Table 4.13: Relationship Between Trade-Off Response and Selected Wetlands' Uses

	Type of Use	Trade-Off Decision		
		Accept	Decline	Don't know
Glovertown (n=30)	KDMP users (n=15)	3 (20%)	9 (60%)	3 (20%)
	Non-KDMP users (n=15)	4 (26%)	10 (67%)	1 (7%)
Steph. Crossing (n=30)	'Sanctuary' users (n=15)	2 (13%)	10 (67%)	3 (20%)
	Non-'Sanctuary' users (n=15)	8 (53%)	6 (40%)	1 (7%)
P. Pond (n=30)	Consumptive-only users (n=19)	16 (84%)	2 (10%)	1 (5%)
	Other and non-users (n=11)	9 (82%)	1 (9%)	1 (9%)

Table 4.13 suggests inconsistent associations between appreciative use of the two access-facilitated wetlands, and levels of concern. Although a protective attitude was

reported among KDMP users, this group's tendency to decline the trade-off (60%) is slightly lower than non-KDMP users in Glovertown (67%). Users of 'The Sanctuary' in Stephenville Crossing are, however, more likely to express concern, as reported by declining the trade-off (67%), than those respondents who do not use that wetland area (40%). The strong tendency for consumptive users of the Parsons Pond sample to accept the trade-off (84%) mirrors that of the community as a whole, data that are consistent with the argument (above) that economic climate, rather than manner of use, overwhelmingly informs trade-off decisions in this community.

4.11.2 Relationship between use and concern as measured by perception of threats

Given that economic incentive may be an unsatisfactory measure of concern, particularly in Parsons Pond, a further gauge may be used, that of the perception of environmental pressures and threats. Identifying this as a potential route to the development of environmental concern, Dunlap and Heffernan (1975) theorised that outdoor recreational activities foster environmental concern through the creation of awareness, among users, of environmental issues. For example, people may become concerned following exposure to the results of environmental deterioration during recreational activities in the natural environment. The data regarding perceptions of environmental threats, pressures, and conflicts of use, therefore, lend themselves to an alternative measure of concern, and are of interest in the comparison of user groups, since an awareness of such problems may be important to the development of an ethic of respect and concern for nature. For simplicity and to minimise 'lack of data' reporting, Table 4.14 categorises respondents as either expressing recognition of environmental threats, pressures, or conflicts of use, or not expressing such recognition.

4.11.2.1 *Results*

Table 4.14: Relationship Between Perception of Threats and Pressures, and Selected Wetlands' Uses

	Type of Use	Perception of threats, pressures, or conflicts of use	
		Recognised	**Not Recognised**
Glovertown (n=30)	KDMP users (n=15)	3 (20%)	12 (80%)
	Non-KDMP users (n=15)	8 (53%)	7 (47%)
Steph. Crossing (n=30)	'Sanctuary' users (n=15)	3 (20%)	12 (80%)
	Non-'Sanctuary' users (n=15)	3 (20%)	12 (80%)
Parsons Pond (n=30)	Consumptive-only users (n=19)	7 (37%)	12 (63%)
	Other and non-users (n=11)	2 (13%)	9 (82%)
	Hunters / fishers only (n=16)	7 (44%)	9 (56%)
	Other and non-users (n=14)	2 (14%)	12 (86%)

Table 4.14 suggests that KDMP users are significantly less likely to express concern by reference to recognition of environmental threats and pressures (20%) than other members of the community of Glovertown (53%), while the use of 'The Sanctuary' in Stephenville Crossing appears to make no difference to such a level of concern. Consumptive users in Parsons Pond, however, expressed concern in this way (37%) more frequently than other members of the community (13%), and the sub-group of hunters and / or fishers (that is, excluding those respondents who only use the wetland for berry

picking, see below) express this manner of concern (44%) more than twice as much as the appreciative users of KDMP and 'The Sanctuary.

While the link between appreciative uses and concern was found to be stronger than for consumptive uses in the relevant literature, analysis of responses from appreciative users of KDMP and 'The Sanctuary' does not suggest facilitating appreciative use will necessarily foster greater environmental concern. Indeed, the data suggest that hunters and fishers may be the most likely to articulate an awareness and concern for environmental threats and pressures, although limited quantitative data does not permit the proper examination of this possibility statistically. Focusing on values, these issues are explored further below by use of questionnaire and qualitative data.

4.11.2.2 *Note on Berry Pickers as a Sub-Group*

Table 4.14 reports perceptions of threats and pressures expressed by the sub-category of consumptive users that incorporates only hunters and fishers. In order to comment better on concern levels of hunters and fishers, this separation of users was necessitated by the situation whereby not one member of the entire sample, whose only use of the wetland was berry picking (n=13), made reference to these problems.

It is not clear why berry pickers do not articulate any concern about environmental threats, and report less concern for the environment, as measured in this way. Possibilities include the economic nature of this activity, although it is not clear how many of the sample engaged in the activity for commercial purposes rather than as a subsistence activity. The sale of hunted meat such as moose and caribou is strictly regulated in Newfoundland and Labrador, and the vast majority of licences prohibit it. Therefore, hunting is more important as a subsistence than commercial activity. It is also likely that

moose and caribou meat are comparatively more important as subsistence foods than are berries. Perhaps the physical activity of berry picking itself, which often involves no more excursion into the natural environs than parking a car by the side of the road and walking a few paces onto the wetland, precludes the development of environmental concern. Some references were made regarding concern over the number of berry pickers (often not from the local community) who use local wetlands, but only one respondent linked this activity to broader environmental issues:

Interviewer: *Do you think that the current level of protection is sufficient, insufficient, or too stringent?*

Parsons Pond Respondent (No. 3): *...There should be a berry-picking season. People come in and pick them before they are ripe. There's an effect on the ecosystem, like there are none left for the geese who feed on them.*

4.11.3 The categorisation of appreciative values

4.11.3.1 *General Theory Discussion*

The preservationist, John Muir, espoused the aesthetic and morally inspired preservation of nature (Norton, 1991), implying the categorisation of aesthetic enjoyment of the natural world as ecocentric. Dunlap and Heffernan (1975), make similar associations:

> Consumptive activities...involve taking something from the environment and thus reflect a "utilitarian" orientation toward it...In contrast, appreciative activities...involve attempts to enjoy the natural environment without altering it. Such activities are thus compatible with the "preservationist" orientation which attempts to maintain the environment in its natural state (p. 19-20).

The somewhat grey divide (see below) between anthropocentrism and ecocentrism is perhaps best illustrated by considering the aesthetic valuation of the environment. The environment is valued when it is perceived to possess utility: it has a use, be it economic, recreational or purely psychological, a use tied to a particular goal of an individual (Burningham and O'Brien, 1994). Any valuation of the environment depends on use in its broadest sense. The placement of use in anthropocentrism is self-explanatory but, in addition, ecocentrism still relies on a benefit conveyed by the natural environment to the valuer. That is, a natural environment that is of value, whether it provides direct economic benefits, food for survival, a location for recreation, a restorer or source of tranquillity, or simply the satisfaction of knowing it is there, conveys utility. Even the most extreme ecocentric does not value nature selflessly: it is merely that strong ecocentrics are motivated by the expectation of psychic benefits. Just as an apparently altruistic action always conveys some degree of psychic reward or intrinsic satisfaction to the actor (Smith, 1981), where a morally inspired preservation ethic is cited as a motivator for pro-environmental behaviour, the holder of that ethic still gains satisfaction, peace of mind, or a clear conscience.

In this context it is interesting to note that *perceived* utility has little influence on trade-off responses: those who perceive value in appreciative and those who perceive value in consumptive uses are almost equally likely to accept the trade-off. However, when respondents actually undertake a particular use themselves, that is, when the utility is physically conveyed rather than merely perceived, appreciative valuers are more likely to decline the trade-off.

The key difference between anthropocentric and ecocentric utilities is explained by Benton (1997), who argues that for one to engage in, for example, metaphysical contemplation of the natural world, one must perceive intrinsic worth in it:

> This (metaphysical contemplation) is still a case of valuing nature for some human purpose and so belongs within the spectrum of anthropocentric position, they (those who Benton describes as extreme 'ecocentrics') might argue. My response is to distinguish between an environmental ethic which would advocate preservation of nature because it is necessary to enable humans to engage in metaphysical contemplation and the activity of metaphysical contemplation itself. The former certainly is advocating the protection of nature for a human purpose. However, that human purpose itself necessarily involves a non-instrumental orientation to the natural world (p.35-36).

4.11.3.2 *Appreciative Use and Value Orientation*

The problem with attempting to generalise and categorise appreciative users into value orientations is that the ways satisfaction is generated in an appreciatively used environment are diverse. The act of recreation may be of minor importance (Burton, 1978), and the goals sought by appreciative users can vary greatly when undertaking these activities, goals that may be ecocentric or anthropocentric in nature. For example, wildlife values can be attributed to intrinsic worth or the instrumental benefit of aesthetic pleasure.

Environmental ethicists appear similarly divided. Kellert (1996) categorises aesthetically derived enjoyment of nature as distinct from anthropocentrism, whereas Kahn (1999) states that aesthetic justifications are merely "a less direct form of anthropocentric reasoning" (p100). Similarly Norton (1991) describes appreciative uses as amenity uses that are "non-commercial" (p72), Seligman (1989) includes recreational

and aesthetic values as utilitarian 'human wants', and Hanna (1995) views the act of preserving nature for recreation purposes as anthropocentric.

4.11.3.3 *Values Associated with KDMP and 'The Sanctuary'*

The questionnaire results suggest that users of 'The Sanctuary' tend to be much more strongly ecocentrically oriented than users of KDMP (see Appendix 5.10a and b). Glovertown respondents were, overall, less ecocentrically orientated than Stephenville Crossing respondents, and the ecocentric orientations of both KDMP users and 'Sanctuary' users are comparable to other members of their communities (see Appendix 5.10c and d). However, KDMP users are more anthropocentrically orientated, whereas 'Sanctuary' users are less anthropocentrically orientated compared with other members of their communities. Further, when compared with other appreciative users (see Appendix 5.10e) KDMP users are significantly less ecocentrically oriented.

Why might this be the case? It appears that the utility gained from 'The Sanctuary' is derived primarily from the presence of waterfowl. Of course, waterfowl may be valued because they are considered intrinsically valuable, or merely because they are aesthetically pleasurable. However, the quantitative values data suggest emphasis on the former, as do a number of qualitative responses:

Interviewer: *Do you think that it is important to preserve that wetland* ('The Sanctuary')*?*

Stephenville Crossing Respondent (No. 1): *Definitely. For the waterfowl first, it's like their home. Then, in a selfish way, for myself to look at. Protecting wildlife is enough.*

Interviewer: *Would you say that area ('The Sanctuary') is an asset or detriment to the community, or neither?*

Stephenville Crossing Respondent (No. 17): *Asset. Most importantly for the birds themselves as a safe haven. Also a tourist attraction, and local people love to see the ducks there.*

In Glovertown, while KDMP users made reference to the 'natural' value of the area, further analysis frequently reveals a clearly anthropocentric valuation of this amenity related to its recreational, community status, and tourism value. KDMP is not valued intrinsically, as much as it is for the sake of the community and the anthropocentrically tending outcomes associated with recreation, similar to Benton's (1997) explanation quoted above:

Interviewer: *If you never used KDMP, and it did not benefit you or the community, would you still think that the area was worth preserving?*

Glovertown Respondent (No. 11): *It would be, but it would be hard to get people to support it without the trails.*

Only one respondent specifically mentioned the importance of the ecological functions of the wetland and, generally, natural values were tacked onto the end of more anthropocentric justification:

Interviewer: *Do you think that the wetland (KDMP) is an asset or detriment to the community, or neither?*

Glovertown Respondent (No.4): *It's a real benefit to the community, there's more tourists here than ever before.*

Interviewer: *Can you think of any other uses the wetland might have?*

Same Respondent: *I saw moose: Wildlife.*

Interviewer: *Do you think it is important to preserve that wetland?*

Same Respondent: *It's important to us. It's a tourist attraction. It has no other purpose* (and) *wouldn't be worth protecting if tourists didn't go there.*

Interviewer: *Can you think of any* ***other*** *uses that wetland (KDMP) might have?*

Glovertown Respondent (No.13): *It's a good habitat for wildlife.*

Interviewer: *Would you say that, since the development of KDMP, you feel that you, and other users, have learned and appreciate the importance of wetlands?*

Same Respondent: *Yes, I would say that the park has been greatly appreciated by all users. It certainly is an enhancement to our community.*

While trade-off declination rates were high among KDMP users, there is little evidence that an appreciation of wetlands generally has resulted among users of this park. Indeed, these respondents were the most likely to suggest the trade-off development could go elsewhere:

Interviewer: *If a proposal was put forward to fill in and develop that area (KDMP) in a manner that would be economically beneficial to the community, would you support that proposal or still prefer to keep that area preserved?*

Glovertown Respondent (No. 10): *Tough question. I wouldn't want* ***that*** *area changed, it could go somewhere else. It would spoil our walking trail.*

Glovertown Respondent (No. 11): *Leave it the way it is, there's enough land around for that.*

These results imply that promotion and facilitation of access are not the key contributors to fostering a stronger ecocentric orientation and general environmental concern. The latter appears to be more dependent on the manner of the conservation or preservation value of the area and, particularly, how specific to that area the value is.

What can be objectively observed of KDMP, and is implied by the questionnaire results, is that the development of the wetland has physically created safe and accessible nature, nature that is manicured, fenced in, and a place to *visit*. These aspects strongly imply a shift away from ecocentrism, which sees people as *part* of nature, not separated from it, toward anthropocentrism which, to employ an alternative term for manicuring a wetland, *tames* nature. Such developments can develop in people a taste for artificial nature:

Glovertown Respondent (No. 19): *I wouldn't want it* (KDMP) *to be like the park* (Terra Nova National Park). *There's trees fallen that they don't clean up. It should be maintained better than that.*

4.11.4 Consumptive use and values

It is not only appreciative uses that are not necessarily easy to categorise as ecocentric or anthropocentric. While logic suggests that consumptive uses are, by their nature, anthropocentric, involving the user taking something from the environment, and reflect a utilitarian orientation toward the environment (Dunlap and Heffernan, 1975), it is also the case that the goals sought by consumptive users may transcend anthropocentric motivations. For example, reviewing a number of studies of the motivations behind hunting activities, Kellert (1983) describes differences in satisfaction gained by hunters, which include the enjoyment of natural surroundings and aesthetic appreciation, escapism, companionship, and challenge, in addition to harvesting game. The same author's prior research (Kellert, 1978) categorises hunters as: those who primarily seek the opportunity to be close to nature, who tend to exhibit ecocentic orientations; those who primarily hunt for meat, who tend to exhibit anthropocentric orientations and; those

who primarily seek the opportunity for sport and recreation in their hunting activities, who also exhibit anthropocentric orientations by way of their highly dominative (over their prey) tendencies.

Clearly then, categorising hunters by value orientation becomes a more complex task; just as appreciative users may primarily value a natural area as a venue for their activities away from busy streets, there is no reason why consumptive users may not engage in Benton's (1997) 'metaphysical contemplation' during excursions into natural areas:

Interviewer: *Do you think that it is important to preserve that wetland?*

Gambo Respondent (No.1): *Yes, for hunting and fishing.*

Interviewer: *If you never used that wetland, or thought it did not benefit you or others, would it bother you if it was protected or not?*

Same Respondent: *Yes, if only for walking and looking. I like being out there whether I bag anything or not. I just enjoy being out there.*

4.11.4.1 *Hunting as a Sport or for Subsistence*

Dunlap and Heffernan (1975) found negative associations between hunting, a sub-category of consumptive use, and environmental concern. However, like the variable goals sought by, and motivations behind appreciative users, the manner of that hunting activity, and particularly the values attached to hunting need to be considered. Hunting motivations in this study are differentiated into two categories of 'for sport or recreation', and 'for subsistence' because the consequences of the underlying motivations behind these activities theoretically are very different. Where the hunter depends on the resource for subsistence, he or she will have more commitment to protect it for future use,

knowing that conservation will ultimately benefit him or her (Berkes, 1999). Regarding the values associated with these motivations, studies of indigenous cultures distinguish between the ethics of sport and subsistence hunters (e.g., Hames, 1987; Berkes, 1999). Indeed, intuitively the trophy hunter will likely have very different environmental values than, for example, the Cree fisherman. Referring to the reliance on natural resources by indigenous groups, Hames (1987) points out that the question of whether such groups should be considered conservationists or just efficient hunters carries, in practice, little relevance, since the two are not mutually exclusive and the former is a means to the latter. Evidence of this logic in the study communities is found in a number of hunters' responses. For example:

Interviewer: *Do you think that the current level of protection is sufficient, insufficient, or too stringent?*

Gambo Respondent (No. 1): *There should be protection. I have a real emotion that it should not be (over) exploited. It's not over exploited now, but you need to educate for what can happen. There's over fishing, people taking home whatever they can.*

Interviewer: *Do you consider it important to preserve that wetland for future generations?*

Glovertown Respondent (No. 27): *Yes, definitely. I'm an outdoors person, a hunter, but also a core conservationist. Hunting rules are good if it means conserving for the children.*

While the interview data are insufficient to properly explore differences in values and attitudes between sport and subsistence hunters, Table 4.15 shows the extent to which the sample considered hunting as a sport or recreational, or subsistence activity.

Table 4.15: Categorisation of Hunting

	Hunting categorised as a recreational activity	Hunting specifically not categorised as a recreational activity
Gambo (n=9)	4 (44%)	5 (56%)
Glovertown (n=12)	6 (50%)	6 (50%)
Stephenville Crossing (n=2)	Lack of data	
Parsons Pond (n=25)	6 (24%)	19 (76%)

There are limited data due to the absence of a question specifically investigating this perception, and these results rely on references made in various contexts during the interviews. While respondents in Gambo and Glovertown are fairly evenly split over how they view hunting, Parsons Pond respondents referred to hunting as a subsistence activity more than three times more than as a recreational activity. This may reflect the level of importance of subsistence hunting in Parsons Pond, and may be connected to the results that suggest hunters in this community exhibit stronger ecocentric orientations than hunters elsewhere (see Appendix 5.10b).

It may also be key that the commitment to protect hunting resources for future use extends to future generations, indicative of the role that cultural values attached to traditional hunting practices may play in motivating users to use them, or steward them, wisely:

Gambo Respondent (No. 13): *I believe things should be left like it is. I would like for my grandchildren to be able to go out and hunt like I can.*

Glovertown Respondent (No. 6, a hunter): *Sure* (it is important to protect the wetland for future generations), *it is part of our heritage.*

Parsons Pond Respondent (No. 3): *Definitely* (important to protect the wetland for future generations), *for my son, so that he can hunt.*

Parsons Pond Respondent (No. 6): *Keep it like it is. Hopefully my daughter will be able to go hunting.*

Ultimately, however, it would appear that the influence of such values is limited by concerns that constitute preservation an impractical, if not impossible, choice:

Parsons Pond Respondent (no. 13): *The grandchildren won't be staying here. Parsons Pond will die, 'The Pond' will die unless the oil wells are started. If everyone has gone to Ontario, what's the point in preserving the marsh?*

Notes

1) It is acknowledged that Leopold's (1949) *Land Ethic* can be interpreted as a radical form of ecocentrism that places the rights of the biotic community before that of the individual, including the human individual (e.g., Regan, 1983). This interpretation is not suggested to be reflective of the ethics of Parsons Pond community members. The comparison is not made in an attempt to pigeon-hole the community's ethics as one or another championed by various environmental ethicists, merely that there is evidence of holistic ecocentric tendencies, of which Leopold favoured, in their responses.

Chapter 5: Conclusion

5.1 Summary of the Research

This thesis has explored environmental ethics, and local and centralised natural resource decision-making in four rural Newfoundland communities. By investigating the values associated with, attitudes towards, and uses of local wetlands among members of these communities, this study has assumed the context of a culture of a historic connection and dependence on local raw resources. The thesis' particular focus on the way people's valuations of the natural environment are affected by the way they engage with nature through their activities in it, considering both traditional practices of subsistence and modern recreational uses, reflects the adoption of the culturalist view of the construct of people-nature relations. The thesis has examined the consequences of, or decision-making outcomes associated with, different constructs of environmental values. In doing so, it has sought to stress the decisive role of values in decision-making, whether by an individual community member, or at policy level, and to direct attention toward the potential of incorporating local ethics into the management of community natural resources.

The study of community members' values, attitudes, and uses was conducted by employing both an exploratory interview technique and a structured questionnaire. In order to examine the role that values assume in policy-making, a community level environmental stewardship programme, initiated by an agency of provincial government in two of the four study communities, has been examined. The programme is also used as a case study of ethics in participatory community management. Theoretical

environmental ethics literature, theoretical and empirical studies of peoples' uses of the natural environment, and the ethical analysis of the Municipal Wetlands Stewardship programme (MWS), provide the contexts for interpreting the implications of the value and attitudinal data gathered in this study.

5.2 Brief Overview of the Main Findings of Community Members

Members of the four communities perceive and hold a range of values and attitudes about their local wetlands, which inform different opinions about their importance and how they should be managed. These values and attitudes are predominantly, but not exclusively, linked to personal uses made of the wetlands. Local wetlands are valued by the community members for reasons as diverse as providing venues for moose hunting or rabbit snaring, places for the peace and tranquility of a walk, tourist attractions, waterfowl habitat, filtering systems for the water supply, or just because they have been there for thousands of years. In many cases it is important that these values will continue to benefit future generations. The values that the local wetlands hold for community members bear significantly on their decision-making stances as they relate to these wetlands. The way that arguments are constructed that result in decisions pertaining to the local wetlands' environment suggest that individuals' tendencies toward environmental ethical orientations influence their positions on environmental issues. Other, 'non-environmental', variables, in particular community economic security and stability concerns, also interact with, and bear significantly on an individual's environmental decision-making.

5.3 Uses of the Natural Environmental and Associated Environmental Ethics

The most frequently cited values (utilities) associated with local wetlands are based on direct use. There is a level of use of a natural environment by members of all four communities that, particularly with regard to levels of consumptive uses, would likely be higher than in urban contexts, or in the agricultural-rural contexts of their Canadian mainland neighbours. This likely difference reflects the continued importance of the local environment in the everyday lives of community members in rural Newfoundland. The differences in values associated with different uses of local wetlands, which will be discussed in detail, suggest that personal use of the natural environment is a key factor affecting the development of environmental values.

5.3.1. KDMP and 'The Sanctuary': Values and appreciative uses of wetlands

It is clear that the facilitation of appreciative use of the wetlands of KDMP in Glovertown has fostered protectionist attitudes among the park's users. As far as can be predicted, behavioural (decision-making) outcomes consistent with these attitudes have developed toward this wetlands' area as a result of this use. Although not part of a formally named initiative, the discussion of the values and attitudes of the users of KDMP highlights the potential for local stewardship, that is, the importance that this wetlands' area has assumed since the development of the park implicitly protects it. This ethical knowledge (of what is locally valuable) would constitute a powerful force in the face of, for example, a development threat.

It is apparent, however, that the pro-environmental attitudes among KDMP users are very specific to the park, and do not constitute a general concern for the natural environment. Considering also the direct human user and human community benefits

associated with KDMP, their specific concern for this area appears anthropocentrically motivated, that is, the object of the valuation enjoys such a status as a result of specific benefits it conveys to humans. The consequences of the values and attitudes among users of KDMP include a privileging of the particular aspects of nature that are compatible with these valuations, the development of a taste for nature that is manicured for accessibility, and a view of nature as a place to visit. Separating people from nature, by constructing it as a place to visit, portraying human needs in nature as confined to an oasis of naturality separate from everyday business, and 'taming' it (for accessibility) are consequences associated with anthropocentrism rather than ecocentrism.

Similarities can be drawn between attitudes toward KDMP, and Stephenville Crossing's 'Sanctuary', since, through MWS, the use of the latter wetlands' area has also fostered strong protective attitudes. However, the values reported by users of the 'The Sanctuary' differ from KDMP users by virtue of their focus on waterfowl, since they are primarily based on the intrinsic value of an aspect of nature, in addition to the aesthetic enjoyment conveyed to the user. While the protective attitudes among the users of 'The Sanctuary' are less specific to this area, they likely remain value-specific in that they are concentrated on waterfowl. Therefore, users of this area tend to exhibit concern that extends to other wetland areas, but only insofar as they provide valued waterfowl habitat.

5.3.2 Consumptive use and values: Subsistence hunters

There is not one wetland in any of the four communities that is comparable in popularity to KDMP and 'The Sanctuary', in terms of numbers of visitors, for consumptive uses. In general, therefore, the motivations and goals sought by consumptive users of local wetlands vary and are not necessarily focused on returning with a raw

resource. Indeed, the values attached to hunting activities do not preclude ecocentrism, even though it would appear inconsistent with the logic of consumptive use, since its definition implies anthropocentric-tending motivations. Nevertheless many hunters in this study incorporate ethical considerations, including ecocentrically-tending, for the natural environment in their responses, both when describing their activities on local wetlands, and in formulating opinions or constructing hypothetical decisions regarding them. Such responses are particularly apparent in Parsons Pond, where the questionnaire-measured environmental value orientations of hunters also tend strongly to ecocentrism. The reasons behind the appearance, in this study, of an association between ecocentric-based concern for the natural environment, and consumptive, more than appreciative use, are discussed below.

5.3.3 The use of nature and the development of environmental ethics: Theoretical ethical assumptions, empirical literature, and the context of rural Newfoundland

Dunlap and Heffernan (1975) suggest that the association between ecocentric values and appreciative use of the natural environment, found also in some normative environmental ethics theory, explains the positive correlation they have found between such uses and environmental concern. Both their empirical findings, which have found some subsequent support, regarding a link between particular uses of, and concern for, the natural environment, and their theoretical environmental value association with these uses, have little applicability to the contexts of this study.

5.3.3.1 Association of Use of the Natural Environment and Environmental Concern

Support is found for Dunlap and Heffernan's (1975) findings that environmental concern among users of the natural environment is strongest for the aspects of the natural

environment necessary for undertaking those uses, whether appreciative or consumptive, but not for their findings that suggest appreciative use, rather than consumptive, is more likely to foster environmental concern. Logic suggests that, where a hunter depends on the resource for subsistence, he or she will have more commitment to protect it for future use, including those of future generations of the community. Indeed, if environmental concern is most strongly linked by use to the aspects of the natural environment necessary for undertaking that use, and where the user understands the interdependency of the various parts of the ecosystem, the more likely that an holistic ethic is developed that maintains biodiversity and sustainable resource use. This would be the case where hunters, through their activities, are exposed to the consequences of non-conservative practices and to pressures and threats to local resources, as suggested here.

This anthropocentrically motivated concern for the natural environment, however, may only be a partial explanation for the development of environmental concern among hunters in Parsons Pond, since this group exhibits such strong ecocentric tendencies.

5.3.3.2 Ethical Associations of Uses of the Natural Environment

Research into motivations behind hunters belonging to contemporary societies also identifies ecocentric orientations among particular types of hunters (Kellert, 1983). The apparent anomaly of the association of ecocentric tendencies with hunting use is also supported in the literature studying indigenous cultures and their hunting practices, which note the deeply moral hunting ethic in contrast to an anthropocentric, use orientated, or utilitarian approach (e.g., Berkes, 1999). Dunlap and Heffernan (1975) distinguish consumptive use from appreciative use by suggesting that the former involves taking something or altering the natural environment. However, hunter-gatherers, as Brody

(2000) points out, "do not make any intensive efforts to reshape their environment. They rely, instead, on knowing how to find, use and sustain that which is already there" (p. 89). While hunting activities involve taking game from the environment (although, as has been seen, this is not necessarily the key motivation), if such practices are conservative and sustainable, the manicuring of natural areas for appreciative use, such as the development of KDMP, involves more permanent alteration to the natural environment than do subsistence hunting activities.

Encouraging the appreciative enjoyment of the natural environment has benefits, but it does not enjoin man and nature (Cronon, 1995). In his criticism of conceiving ideal nature as that which is passively appreciated rather than consumptively used, Cronon (1995) argues that, where nature becomes a place to visit and separate from everyday human business, it is likely to reinforce environmentally irresponsible behaviour. This stance echoes Leopald's view (in Norton, 1991, p. 56) that "any experience that reminds us of our dependency on the soil-plant-animal-man food chain, and of the fundamental organisation of the biota" is key to the development of an ethic of respect for nature. The feeling, and awareness of a connection with nature that according to White (1995) is more deeply provided by work, rather than recreation, in the natural environment, may explain the appearance of ecocentric orientations among subsistence hunters, and is coupled with a form of enlightened anthropocentrism that identifies the well-being of the human community with that of the natural one.

5.3.4 Privileging appreciative uses and values: The need for context

Studies of the way that uses of the natural environment influence the environmental values of people undertaking those uses are largely motivated by the

potential for informing environmental programmes. Where appreciative uses of the natural environment have been found to lead to pro-environmental constituencies, promoting and facilitating those uses can be employed as a strategy to achieve and maintain environmental quality (Dunlap and Heffernan, 1975; Nord, 1998). The risk with such a strategy is that it can privilege appreciative use values, and the aspects of nature that convey them. In broader environmental debates, the privileging of objects of appreciative or aesthetic value is witnessed in public opinion expressing concern for the well-being of large, attractive animals such as seals, while more significant impacts to wildlife due to habitat loss go unrecognised (Kellert, 1983). In the case of KDMP, the area becomes privileged at the expense of more ecologically productive wetlands as the values associated with appreciative enjoyment become more important to the beholder than ecological values.

Simultaneously, appreciative uses can promote the separation of people and the natural environment by creating parks to visit, and, unlike subsistence hunting use, a separation of people from the raw resources on which, to varying degrees, many communities still depend. Such a separation is the cause of the modern perception of the natural environment known as 'the urban perception' (Gomez-Pompa and Kaus, 1992). It is the individual who distrusts the consumptive use of nature who possesses such a view because, from a typical urban standpoint, he does not have to face the effects on nature of uses that provide for his lifestyle (White, 1995). From such a position, the view of ideal nature as untouched 'wilderness' (Cronon, 1995) is tenable. While rural Newfoundlanders do not go without many of the manufactured, material goods of their urban, mainland neighbours, the continued role of nature as a direct provider suggests a view here that is

contrary to such a concept. While promoting appreciative use may be an effective strategy for an increasingly detached from nature modern society, espousing aesthetic values constitutes a form of elitism that can manifest itself in the negative judging of consumptive uses undertaken by members of directly resource-dependant communities.

5.4 Values, Policy, Stewardship, and Participatory Management: Findings of the Ethical Analysis of MWS

The original objective of this thesis, to evaluate the value and attitude changes as a result of the MWS programme, led to the broader study that ethically questions the programme and its objectives. This section discusses some of the key findings of that study, and their implications.

5.4.1 MWS as policy: Do values matter?

The ethical study of the MWS programme, and the way that it functions in the participating communities, has identified the values that the programme espouses and has sought to provide evidence that environmental policy is not value-free. The MWS programme is representative of centralised policy since it represents a course of action adopted at government level and executed through one of its agencies. Included as a justification for the scope of this study were the arguments that all environmental policies are based on judgements about what is valuable, and pursue the fulfillment of particular value-laden purposes, and these values make a practical difference to the outcomes of the ensuing policy (Stenmark, 2002). The policies represented by MWS are no different.

One reason why decision-making based on scientific knowledge is not value-free is that what one chooses to measure by science is inherently value laden. Biological science, under the guidance of the EHJV, ascertains the importance of community

wetlands as habitat or staging grounds for waterfowl. Managers do not measure, for example, a wetland's role in water purification, or as a buffer zone that reduces soil erosion, or as a source of food for moose, or (if it could) its aesthetic beauty. Science is not directed by the EHJV to collect these measures, because the natural objects of priority for the EHJV are waterfowl (ultimately linked to anthropocentric motivations). Accordingly, the selection criterion of participating stewardship communities is the presence of wetlands in those communities that fulfill those goals. To those communities in Newfoundland that have approached the EHJV, interested in participating in the MWS programme but do not possess wetlands that are important to the survival and increase of waterfowl populations – potential 'stewards', perhaps, who value wetlands for other reasons - and, potentially, to the landscape of rural Newfoundland, the values underlying the policies of the programme indeed make a practical difference.

5.4.2 MWS as participatory management: To what extent are local values incorporated into this arrangement?

The values underlying EHJV policy also have practical implications for hunters in participating communities. Reminiscent of, but opposite to, how Aldo Leopold and Rachel Carson appealed to a broader range of environmental constituencies by employing anthropocentrically orientated arguments to achieve their ecocentrically motivated ends (Norton, 1991), MWS encourages, or at least facilitates, the development of preservation (*from* consumptive use) values, yet its underlying motive is based on the conservation (*for* consumptive use) values of waterfowl resources, particularly to US hunters. It is questionable whether or not the underlying value motivation is made clear to the members of stewardship communities. The means to protection might be justified by the

ends of wetland preservation were it not for the potential marginalisation of those who do not prioritise values compatible with those of the EHJV. So, while the programme functions in such a way as to appear to have delegated power to local communities, the extent to which the programme reflects citizen control (Arnstein, 1969) is ultimately limited by the way that the EHJV retains the ethical power of choosing the values of the participatory management arrangement.

5.4.3 Consequences of retaining value judgements in participatory management

It is evident from this study that two practical implications arise from the power dynamic created from the value-statement motivating the EHJV programme. The first considers the situation whereby the marginalisation of particular locally-held values causes conflict. The second is related to the ethical question of MWS, its objectives regarding the encouragement of pro-environmental ethics, and the question 'in seeking to fulfill such value objectives, what values does it necessarily seek to change?'

5.4.3.1 *Value Conflicts*

Local values must be incorporated into participatory management initiatives in order for these initiatives to gain sufficient support to make them effective (Parker, 1995). Value conflicts arise when one particular set of values is promoted or privileged, since it is necessarily done so at the expense of another (Stenmark, 2002). An issue of environmental movements that espouse the 'non-use' of nature is that they polarise use values. This is evident in well publicised 'environmentalists' versus local resource user conflicts such as the Canadian east coast seal hunt. Adoption of such a stance can lead to the imposition of a 'right' value system at the expense of the rural poor (White, 1995). MWS does not explicitly adopt an anti-hunting stance, but this scenario is somewhat

reflected in the outcomes of the programme since its value-laden objectives necessarily encourage appreciative values at the expense of local consumptive resource users.

There is evidence in the study of Stephenville Crossing that local hunters have felt marginalised by the promotion of appreciative values toward local wetland resources. When social norms change in a small community, witnessed here in community members' attitudes toward waterfowl, this pressure is to be expected (Newhouse, 1990). The view of the MWS initiative among this group of hunters is generally, at best, a reluctant acceptance rather than support. A more problematic conflict of values, however, may be arising between business interests in the community, who articulate the presence of the 'use' versus 'non-use' conflict, by perceiving the push for wetlands' preservation as a threat to the need for economic use of the local environment.

5.4.3.2 *Marginalising Traditional Stewardship Ethics*

While trail building is considered by the EHJV only as an effective delivery mechanism for the stewardship message, rather than a specific end objective, it is important to ascertain exactly what message is being delivered. This work highlights that it is a problematic assumption that appreciative use will necessarily foster a stewardship ethic. Moreover, it is important to ascertain what ethics of stewardship already exist among members of these communities that may be lost by delivering this message.

There exists a positive affect associated with facilitating access through the development of recreational facilities in natural areas. It apparently fosters attachment, and protective attitudes, and particularly affords the opportunity for people to have contact with nature who would not normally do so: in the two communities that do not possess such wetlands, the ability of the hunter group to speak with familiarity about a

wetland (frequently they exhibited knowledge of many) strongly outweighed that of the non-hunter group. Traditionally, it is unlikely that rural Newfoundlanders would have needed boardwalks and trails to familiarise themselves with, and learn the values of the importance of their local environs. While the creation of wetland parks for appreciative use may have benefits for an increasingly detached-from-nature society, the 'traditional' subsistence uses continue. In other words, the access-facilitated wetlands in Glovertown and Stephenville Crossing play a role in developing awareness of wetlands, but an awareness that hunters already possess. Therefore, hunters in the latter community may be forgiven for their ambivalence toward MWS since they are left to wonder why they would wish to walk around a wetland, having spent a day of work in one, in order to gain an understanding of its importance that has been learned through years of using it for subsistence, even survival, purposes. While the MWS programme seeks to encourage ethics of stewardship, or a particular construct thereof, these ethics appear to clash with, and marginalise, the traditional stewardship ethics of local subsistence users. While the objective of protecting local wetlands is valid, ironically it may be that using them consumptively has developed a more appropriate ethic.

5.5 The Role of TEK in Resource Management: Lessons from Parsons Pond

By retaining the value judgement, what is not incorporated into the MWS programme is the traditional stewardship ethic of local subsistence users. To the extent that a group's reliance on local resources has developed, over generations, an intimate knowledge of and relationship with local nature, these ethics can be considered as traditional ecological knowledge (TEK). To the extent that a key rationale behind

studying TEK is to develop a new environmental ethic by learning from the wisdom of its holders (Berkes, 1999), and that this traditional stewardship ethic may be adapted to more effectively address local resource problems, there appears a good reason to consider it as TEK. The objective of the following is not to attempt to comprehensively describe the environmental ethics of the community members of Parsons Pond, but to employ this community's data to demonstrate the importance of the latter argument, that is, the role of incorporating placed-based ethics to address resource problems.

5.5.1 Adapted values: Environmental ethics in Parsons Pond

> Economic growth is not an end itself to be achieved at any cost. Other values, principally the protection and nurturing of the natural environment, conservation of renewable resources and social harmony, take precedence. The economy is embedded in natural and social life to serve the needs of the community and its people (House, 1993 p.277).

The role that the natural environment plays in the lives of rural Newfoundland communities is reflected in the interview dialogue of many community members, particularly those of Parsons Pond. To assume that environmental decisions can be reduced to rational economic choice, and thus conclude that, on account of their trade-off responses, residents of Parsons Pond care little for their local environs relative to economic incentive, is to ignore how these decisions are related to the moral principles that justify them. Construction of arguments reveals equally important environmental value influences that suggest an ethic of stewardship that may have historically ensured the survival of this community.

The depth of study required in environmental ethics research is exemplified by the discussion of Parsons Pond. Ethical analysis must judge practices not by their assumed normative associations but by their outcomes. To suggest that people's moral concern for

the natural environment is tainted because they are concerned about their own survival is at the very least, disingenuous (Seligman, 1989). Among community members of Parsons Pond, there is evidence of holistic, ecocentric views, but such ethics do not replace obligations to one's family or community, nor the pursuit of basic needs. Nobody places nature above the needs of humans in this community. Rather than being able to consider Parsons Pond responses as reflective of one or another particular school of normative thought, they are, in practice, developed by using nature in accordance with the need for subsistence and survival. The community members of Parsons Pond may legitimately be described as stewards of a natural system of which they see themselves as part, albeit as top predator and retaining decision-making authority.

5.5.1.1 *Practical Ethics that Address Resource Dilemmas*

The ultimate practical goal of the theoretical environmental ethics debate is the development of a framework for a human relationship with nature that protects and enhances the natural environment on which people depend. Studies of a group's TEK take this debate into more practical contexts by identifying the ethics of these groups and their consequences for the natural environment on which they depend. Certainly the test of the practicality of an ethic for resource management is in situations where neither basic needs are secure nor environmental quality is a luxury. The challenge inherent to stewarding of the natural environment in Parsons Pond is to resolve the conflict between economic and environmental interests, or at least make the economic and environmental trade-offs work in the long term. Stewardship here is not theoretical, nor is its underlying ethics, for stewardship must provide a practical, workable model. This means that a stewardship ethic must have a bottom line in terms of preservation and address the needs for using

nature: temper the ideal with the practical. Making the economic and environmental trade-offs work in the long term, as is attempted in the reasoning of Parsons Pond respondents, may be a dilemma that has been solved for many generations. An ethic of stewardship that preserves a local wetland but not the human community is stewardship that has failed. Policy or co-management arrangements that retain environmental value judgements ignore the realistic potential that the problem of finding the middle ground between use and preservation has, in the place to which it is subject, been engaged for centuries. The 'right' values are more likely to be found by incorporating local ethics and values into resource management, since, in the Darwinian sense (Norton, 1991), a community has found the right ethics if they have ensured their survival.

5.6 The Role of TEK in Resource Management: Lessons from MWS

Marginalising those community members who prioritise consumptive use values is not merely unjust. If it were to be taken to the extreme, privileging preservation values would leave human society precisely nowhere to live and survive on the natural environment (Cronon, 1995). In a resource dependant society, "we need an environmental ethic that will tell us as much about using nature as about not using it" (Cronon, 1995, pp. 85). In a practical sense we cannot create parks or waterfowl sanctuaries out of every remaining piece of natural environment in order to fulfill the protective goals of environmental ethics. Yet, under MWS, those who may possess TEK that can address this problem have no avenue to participate and impress these ethics to engage this issue.

There is no necessity that consumptive use equates to exploitation: "Renewable resources can be wisely, even lovingly managed if people have the knowledge, skills and

will to do so" (Lerner, 1986: pp. 56). How MWS functions in communities is not the subject of this thesis and there are likely complex social processes that differ between communities. However, while it is apparent that it can initially appeal to a range of values, and people may involve themselves in environmentally related activities at various levels for non-environmental reasons, logically it necessitates a concern for, or values held in, waterfowl resources by the leaders of the programme in each community to drive it. While acknowledging that the programme may have to be sold on various values, the leaders interviewed in this study reflect this logic. Part of the process of MWS, through education, awareness, and other measures that encourage values sympathetic to the goals of MWS, appears to be a building on values and attitudes that already exist in communities. One reason people do not act on their values and attitudes is that they do not have the avenues to do so (Hungerford and Volk, 1990). MWS provides that avenue, but only for those who hold values sympathetic to their goals. In these situations the power of local stewardship is evident – protection by ethical knowledge – highlighting how policy based upon local values can be effective in resource management. If there are traditional stewardship ethics among hunters, what avenues to act are this group provided with? Resources can be wisely, even lovingly managed if people have the knowledge, skills, will, and are *empowered* to do so.

5.7 A Note on the Convergence Theory and Normative Anthropocentric Ethics

At this juncture, it is necessary to address one further literary debate. A non-ethically-based argument can be made for increased community autonomy in local resource management, which can be supported by the responses found in Parsons Pond. In simple terms, such initiatives tend to eliminate externalities (that is, the situation where

the full costs, or benefits, of a decision are not borne by the decision-maker). Externalities in resource management clearly occur where political or corporate interests enter the decision-making arena. Not only is local level decision-making more likely to consider the needs, aspirations, and values of local people, they are more likely to be made with an awareness of the depleting or damaging consequences of their decisions. Decisions designed to mitigate such consequences are more likely if the decision-maker also bears the costs of such consequences.

Despite very thorough discussions of indigenous groups' environmental ethics, Berkes (1999), in concluding the need for community-based resource management, states that "Whether traditional peoples practice conservation or not depends more on this fundamental point (that both costs and benefits of any decision will be borne by the same group) than on any supposed natural inclination of a group to act as conservers or non-conservers" (p. 181). Such a statement appears to lend credence to Norton's (1991) arguments that the consequences of anthropocentrism converge with those of ecocentrism when it is recognised that human health and quality of life are dependent on the natural environment. This, however, carries problematic assumptions, for example, that safe limits of resource use can be identified, and unlike anthropocentrism, under ecocentrism, environmental protection is not conditional on the recognition of such limits.

Moreover, Parsons Pond responses indicate that local decision-making in this community does incorporate moral regard for the local natural environment: it is not of value merely because of its role in the survival of the community. The 'authority systems of management' (Berkes, 1999) that address resource problems in this community may

not function the same way without such morally ascribed values. The ethics underlying local practices must be understood for what they are by appropriate study, rather than attempting to, for example, reduce the trade-off responses of the community members of Parsons Pond to a cost-benefit analysis. The awareness of the costs and benefits of environmental decisions are derived from an ethical knowledge of a far more complex set of values than economics, or indeed natural science, can measure.

5.8 Concluding Remarks and Recommendations for Future Research

> Environmental valuations fulfill many uses: environments may be valued for the profit or economic benefit they can bequeath, they may be valued for the multiple pleasures they bestow, they may be valued for the security or stability they provide in some people's lives. These and other types of valuation...must be of equal concern to the policy community if goals of sustainability and environmental care are to gain sufficient support to make them realistic political and social targets (O'Brien and Guerrier, 1995 p.xv).

Policies enabling responsible local concern should be built on the recognition that the value of localities to their inhabitants can form a powerful motive for local environmental stewardship (Parker, 1995). This is evident from the ethical study of MWS, as is also the assertion that policy is value-laden, and that the adoption of particular values has practical outcomes for the results of that policy. The culture of rural Newfoundland that has interwoven ecology and economy (Ommer, 2000b) includes the ethical knowledge (of what is locally valuable) that can also address modern resource dilemmas. The practical implication for resource management and policy that should be of most concern is that these ethics can be marginalised by the value judgements of outside decision-makers.

Studies of the traditional ecological knowledge of rural Newfoundland communities should be placed on future research agendas since the role that these adapted ethics can play in participatory management and policy-making is clear. There is a gap in ethical studies, between those in modern, urban (or rural) contexts, and the traditional ecological knowledge of indigenous cultures, which is represented by rural Newfoundland. In a resource dependant society, it is imperative to understand the contexts of local ethics and practices rather than default to theoretical ethical assumptions made of modern societies, understand how they have adapted over generations of use to the needs of the community, both human and natural, and explore their potential to adapt to engage modern resource problems. It is imperative too, to critically analyse and openly discuss the ethics of resource management and policy, so that these can also be properly evaluated for what they are, and whose interests and values they prioritise.

The potential of participatory management that incorporates TEK is apparent from studying MWS, but since the scope of its goals and the values upon which local community members are motivated are limited, so is its effectiveness. Participatory management can be effective by way of building on the ethics of community members and by providing an avenue to act on those ethics, but cannot privilege particular values and espouse a notion of stewardship counter to local or historically developed stewardship ethics. The rationale for studying TEK - that power holders can learn from the ethics of local groups - has practical consequences. To suggest that local resource management and stewardship can be built around historically developed and deeply felt concerns is a legitimate strategy, both ethically and practically.

References

Albrecht, S. L. (1975). Conservation and ecology: The environment becomes a social problem. In A. L. Mauss (Ed.), *Social Problems as Social Movements* (pp. 556-605). Philadelphia: J. B. Lippincott.

Alexander, C., S. Ishikawa, and M. Silversten (1977). *A Pattern Language.* New York: Oxford University Press.

Arcury, T. A. and E. H. Christianson (1993). Rural-urban differences in environmental knowledge and actions. *Journal of Environmental Education, 25*(1), 19-25.

Arnstein, S. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners, 35*(4), 216-224.

Barrett, C. B. and R. Grizzle (1999). A holistic approach to sustainability based on pluralism stewardship. *Environmental Ethics, 21*, 23-42.

Benton, T. (1997). Ecology, community and justice. In T. Hayward and J. O'Neill (Eds.), *Justice, Property and the Environment: Social and Legal Perspectives* (pp. 17-40). Aldershot, England: Ashgate.

Berkes, F. (1999). *Sacred Ecology: Traditional Ecological Knowledge and Resource Management.* Philadelphia, PA: Taylor and Francis.

Berkes, F., P. George, and R. J. Preston (1991). Co-management: The evolution in theory and practice of the joint administration of living resources. *Alternatives, 18*(2), 12-18.

Birch, T. H. (1990). The incarceration of wilderness: Wilderness areas as prisons. *Environmental Ethics, 12*, 3-26.

Bonnes, M. and M. Bonaiuto (1995). Expert and laypersons evaluation of urban environmental quality: The 'natural' versus the 'built' environment. In Y. Guerrier, N. Alexander, J. Chase, and M. O'Brien (Eds.), *Values and the Environment: A Social Science Perspective* (pp. 151-163). Chichester, England: Wiley.

Brand, K-W. (1997). Environmental consciousness and behaviour: The greening of lifestyles. In M. Redclift and G. Woodgate (Eds.), *The International Handbook of Environmental Sociology* (pp. 204-217). Northampton, MA: Edward Elgar.

Brody, H. (2001). *The Other Side of Eden: Hunter-Gatherers, Farmers and the Shaping of the World.* London: Faber and Faber.

Brunk, C. and S. Dunham (2000). Ecosystem justice in the Canadian fisheries. In H. Coward, R. Ommer, and T. Pitcher (Eds.), *Just Fish: Ethics and Canadian Marine Fisheries* (pp. 9-53). St. John's: ISER

Burningham, K. and M. O'Brien (1994). Global environmental values and local contexts of action. *Sociology, 28*, 913-932.

Cadigan, S. (1994). The historical role of marginal agriculture in sustaining coastal communities on the Bonavista Peninsula. Occasional paper. St. John's: Eco-Research Project, Memorial University.

Cadigan, S. (2002). The role of agriculture in outport self-sufficiency. In R. E. Ommer (Ed.), *Resilient Ouport: Ecology, Economy, and Society in Rural Newfoundland* (pp. 241-262). St. John's: ISER.

Callicot, J. B. (1984). Non-anthropocentric value theory and environmental ethics. *American Philosophical Quarterly, 21,* 299-309.

Callicot, J. B. (1989). *In Defense of the Land Ethic.* Albany: State University of New York Press.

Callicot, J. B. (1994). *Earth's Insights: A Multicultural Survey of Ecological Ethics from the Mediterranean Basin to the Australian Outback.* Berkeley, CA: University of California Press.

Callicot, J. B. (1995). Environmental philosophy is environmental activism: The most radical and effective kind. In D. E. Marrietta and L. Embree (Eds.), *Environmental Philosophy and Environmental Activism.* Boston: Rowman and Littlefield.

Coward, H., R. Ommer, and T. Pitcher (Eds.) (2000). *Just Fish: Ethics and Canadian Marine Fisheries.* St. John's: ISER

Cronon, W. (1995). The trouble with wilderness: Or, getting back to the wrong nature. In W. Cronon (Ed.), *Uncommon Ground: Toward Reinventing Nature* (pp. 69-90). New York: W.W. Norton and Company.

Davis, J. C. (1970). *The Politics of Pollution.* New York: Pegasus.

Devall, W., and G. Sessions (1985). *Deep Ecology.* Salt Lake City: Perengine Smith.

Dicks, D., C. Collins, L. Feltham, J. Cheeks (1998). *The Flora and Fauna of Ken Diamond Memorial Park.* Report prepared for Ken Diamond Memorial Park Committee.

Douglas M. and A. Wildavsky (1982). *Risk and Culture.* Berkeley: University of California Press.

Dunlap, R. E. and R. B. Heffernan (1975). Outdoor recreation and environmental concern: An emperical examination. *Rural Sociology, 40*, 18-30.

Dunlap, R. E., J. K. Grieneeks, and M. Rokeach (1983). Human values and pro-environmental behaviour. In W. D. Conn (Ed.), *Energy and Material Resources: Attitudes, Values and Public Policy* (pp. 145-168). Washington, D.C.: Westview Press Inc.

Dunlap, R. E. and K. D. Van Liere (1978). The "new environmental paradigm": A proposed measuring instrument and preliminary results. *Journal of Environmental Education, 9,* 359-369.

Eastern Habitats Joint Venture (n.d.). *A Prospectus for the Eastern Habitats Joint Venture.*

Ehrenfield, D. (1978). *The Arrogance of Humanism.* Oxford: Oxford University Press.

Fekete, J. (1988). Introductory notes for a postmodern value agenda. In J. Fekete (Ed.), *Life After Postmodernism: Essays on Values and Culture* (pp. i-xix). London: Macmillan.

Felt, L. F. and P. R. Sinclair (Eds.) (1995a). *Living on the Edge: The Great Northern Peninsula of Newfoundland.* St. John's: ISER.

Felt, L. F. and P. R. Sinclair (1995b). Introduction. In L. F. Felt and P. R. Sinclair (Eds.), *Living on the Edge: The Great Northern Peninsula of Newfoundland* (pp. 1-25). St. John's: ISER.

Felt, L. F. and P. R. Sinclair (1995c). Conclusion. In L. F. Felt and P. R. Sinclair (Eds.), *Living on the Edge: The Great Northern Peninsula of Newfoundland* (pp. 208-216). St. John's: ISER.

Fischer, J. (2000) Participtory research in ecological fieldwork: A Nicaraguan study. In B. Neis and L. Felt (Eds.), *Finding Our Sea Legs: Linking Fishery People and Their Knowledge with Science and Management* (pp.41-54). St. John's: ISER.

Fishbein, M. and I. Ajzen (1975). *Belief, Attitude, Intention and Behaviour: An Introduction to Theory and Research.* Reading, MA: Addison-Wesley.

Fox, S. (1981). *John Muir and His Legacy.* Boston: Little, Brown.

Frankena, F. (1983). Facts, values, and technical expertise in a renewable energy siting dispute. *Journal of Environmental Psychology, 4*, 131-147.

Gagnon Thomson, S. C. and M. A. Barton (1994). Ecocentric and anthropocentric attitudes toward the environment. *Journal of Environmental Psychology, 14*, 149-157.

Gale, R. P. (1972). From sit-in to hike-in: A comparison of the civil rights and environmental movements. In W. R. Burch, N. Cheek, and L. Taylor (Eds.), *Social Behavior, Natural Resources, and the Environment* (pp. 280-305). New York: Harper and Row.

Geisler, C. G., O. B. Martinson, and E. A. Wilkening (1977). Outdoor recreation and environmental concern: A restudy. *Rural Sociology, 42*, 241-249.

Glacken, C. H. (1967). *Traces on the Rhodian Shore: Nature and Culture in Western Thought from Ancient Times to the End of the Eighteenth Century*. Berkeley, CA: University of California Press.

Gomez-Pompa, A. and A. Kaus (1992). Taming the wilderness myth. *Bioscience, 42*, 271-279.

Grieshop, J. I. and M. C. Stiles (1989). Risk and home pesticide use. *Environment and Behaviour, 21,* 699-716.

Grizzle, R. E. (1994). Enviromentalism should include human ecological needs. *Bioscience, 44*, 263-268.

Gunter, V. J. and B. Finlay (1988). Influences in group participation in environmental conflicts. *Rural Sociology, 53,* 498-505.

Hadley, A. T. (1913). *Some Influences in Modern Philosophical Thought*. New Haven, CT: Yale University Press.

Haigh, M. J. (1995). World views and environmental action: A practical exercise. In Y. Guerrier, N. Alexander, J. Chase, and M. O'Brien (Eds.), *Values and the Environment: A Social Science Perspective* (pp. 195-208). Chichester, England: Wiley.

Hames, R. (1987). Game conservation or efficient hunting? In B. J. McCay and J. M. Acheson (Eds.), *The Question of the Commons: The Culture and Ecology of Communal Resources* (pp. 92-107). Tucson, AZ: University of Arizona Press.

Hanna, G. (1995). Wilderness-related environmental outcomes of adventure and ecology education programming. *Journal of Environmental Education, 27*(1), 21-32.

Hanrahan, M. (1993). *Uncertain Refuge: Lectures on Newfoundland Society and Culture*. St. John's: Breakwater.

Hayward, T. (1997). Introduction: Social and legal perspectives on environmental problems. In Hayward, T. and J. O'Neill (Eds.), *Justice, Property and the Environment: Social and Legal Perspectives* (pp. 1-14). Aldershot, England: Ashgate.

Hayward, T. and J. O'Neill (Eds.) (1997*). Justice, Property and the Environment: Social and Legal Perspectives.* Aldershot, England: Ashgate.

Hendee, J. C. (1969). Appreciative versus consumptive uses of wildlife refuges: Studies of who gets what and trends in use. *Transactions of the Thirty-Fourth North American Wildlife and Natural Resources Conference.* Washington, D.C.: Wildlife Management Institute.

House, J. D. (1993). The sustainable outport: A model for community development? In Hanrahan, M. (Ed.), *Through a Mirror Dimly: Essays on Newfoundland Society and Culture* (pp. 265-288). St. John's: Breakwater.

Hungerford, H. R. and T. L. Volk (1990). Changing learning behaviour through environmental education. *Journal of Environmental Ethics, 21*(3), 8-21.

Hutchings, J. A. and M. Ferguson (2000). Links between fishers' knowledge, fisheries science, and resource management: Newfoundland's inshore fishery for North Atlantic Cod, Gadus morhua. In B. Neis and L. Felt (Eds.), *Finding Our Sea Legs: Linking Fishery People and their Knowledge with Science and Management*, (pp. 82-110). St. John's: ISER.

Jackson, E. (1986). Outdoor recreation participation and attitudes to the environment. *Leisure Studies, 5,* 1-23.

Kahn, P. H. (1999). *The Human Relationship with Nature.* Cambridge, MA: MIT Press.

Kaplan, R. (1983). The role of nature in the urban context. In I. Altman and J. F. Wohlwill (Eds.), *Behavior and the Natural Environment* (pp. 127-161).New York: Plenum Press.

Kaplan, R. and S. Kaplan (1989). *The Experience of Nature: A Psychological Perspective.* Cambridge: Cambridge University Press.

Kealey, D. A. (1990). *Revisioning Environmental Ethics.* Albany, NY: State University of New York Press.

Kellert, S. R. (1978). Attitudes and characteristics of hunters and anti-hunters. *Transactions of the North American Wildlife and Natural Resource Conference, 43,* 412-423.

Kellert, S. R. (1983). Affective, cognitive, and evaluative perceptions of animals. In I. Altman and J. F. Wohlwill (Eds.), *Behavior and the Natural Environment* (pp. 241-267). New York: Plenum Press.

Kellert, S. R. (1996). *The Value of Life.* Washington DC: Island Press.

Knopf, R. (1987). Human behavior, cognition, and affect in the natural environment. In D. Stokols and I. Altman (Eds.), *Handbook of Environmental Psychology* (pp. 783-826). New York: Wiley.

Leiss, W. (1972). *The Domination of Nature.* New York: George Braziller.

Leopold, A. (1949). *A Sand County Almanac.* Oxford: Oxford University Press.

Lerner, S. C. (1986). Environmental constituency building: Local initiatives and volunteer stewardship. *Alternatives: Perspectives on Society, Technology and Environment, 13,* 55-60.

Lerner, S. C. (1993). The importance of active earthkeeping. In S. C. Lerner (Ed.), *Environmental Stewardship: Studies in Active Earthkeeping* (pp. 3-8). Waterloo, Ontario: University of Waterloo, Department of Geography Publication.

Lowe, G. D. and T. K. Pinhey (1982). Rural-urban differences in support for environmental protection. *Rural Sociology, 47*(1), 114-128.

Maloney, M. P., and M. P. Ward (1973). Ecology: Let's hear from the people. *American Psychologist, 28,* 583-586.

Mannion, J. J. (Ed.) (1977). *The Peopling of Newfoundland: Essays in Historical Geography.* St. John's: ISER.

Marrietta, D. E. (1995). *For People and the Planet: Holism and Humanism in Environmental Ethics.* Philadelphia, PA: Temple University Press.

Maslow, A. H. (1970). *Motivation and Personality.* New York: Harper and Row.

McBride, M., G. S. Kealey, and S. Cadigan (2002). Jobs at any cost: The political economy of development in twentieth-century Newfoundland. In R. E. Ommer (Ed.), *Resilient Outport: Ecology, Economy, and Society in Rural Newfoundland* (pp. 265-288). St. John's: ISER.

McCay, B. J. and J. M. Acheson (1987). Human ecology of the commons. In B. J. Mcay and J. M. Acheson (Eds.), *The Question of the Commons: The Culture and Ecology of Communal Resources* (pp. 1-36). Tucson, AZ: University of Arizona Press.

McCracken, G. (1988). *The Long Interview: Qualitative Research Methods, Vol. 13.* Beverly Hills, CA: Sage Publications.

McGoodwin, J. R., B. Neis and L. Felt (2000). Integrating fishery people and their knowledge into fisheries science and resource management. In B. Neis and L. Felt (Eds.), *Finding Our Sea Legs: Linking Fishery People and Their Knowledge with Science and Management* (pp. 249-264). St. John's: ISER.

Milbrath, L. W. (1979). *Values and Beliefs that Distinguish Environmentalists from Non-Environmentalists.* Paper delivered at the Annual Meeting of the International Society for Political Psychology, Washington, DC, May 24-26, 1979.

Milbrath, L. W. (1984). *Environmentalists: Vanguard for a New Society.* Albany, N.Y.: State University of New York Press.

Mitchell, B. (1997). *Resource and Environmental Management.* Waterloo, Ontario: Longman.

Moore, G. T. (1979). Knowing about environmental knowing: The current state of theory and research on environmental cognition. *Environment and Behaviour, 11,* 33-70.

Nash, R. F. (1989). *The Rights of Nature.* Madison: University of Wisconsin Press.

Neis, B and L. Felt (Eds.) (2000). *Finding Our Sea Legs: Linking Fishery People and Their Knowledge with Science and Management.* St. John's: ISER.

Neis, B., R. Jones, and R. Ommer (2000). Food security, food self-sufficiency, and ethical fisheris management. In H. Coward, R. Ommer, and T. Pitcher (Eds.), *Just Fish: Ethics and Canadian Marine Fisheries* (pp. 154-173). St. John's: ISER.

Nemec, T. F. (1993). The Newfoundland coast: Prehistoric and historic cultural adaptations. In Hanrahan, M. (Ed.), *Through a Mirror Dimly: Essays on Newfoundland Society and Culture* (pp. 17-66). St. John's: Breakwater.

Newell, D., and R. E. Ommer (Eds.) (2000). *Fishing People, Fishing Places: Traditions and Issues in Canadian Small-Scale Fisheries.* Toronto: University of Toronto Press.

Nord, M., A. E. Luloff, and J. L. Bridger (1998). The association of forest recreation with environmentalism. *Environment and Behaviour, 30*(2), 235-246.

Norton, B.G. (1986). Conservation and preservation: A conceptual rehabilitation. *Environmental Ethics, 8*, 195-220.

Norton, B. G. (1991). *Toward Unity Among Environmentalists.* New York: Oxford University Press.

O'Brien, M. (1995). Changing environmental values: Introduction. In Y. Guerrier, N. Alexander, J. Chase, and M. O'Brien (Eds.), *Values and the Environment: A Social Science Perspective* (pp. 167-170). Chichester, England: Wiley.

Okihiro, N. R. (1997). *Mounties, Moose and Moonshine: The Patterns and Context of Outport Crime.* Toronto: University of Toronto Press.

Ommer, R. E. (1994). One hundred years of fishery crises in Newfoundland. *Acadiensis, 23*, 5-20.

Ommer, R. E. (Ed.) (2000a). *Resilient Outport: Ecology, Economy, and Society in Rural Newfoundland.* St. John's: ISER.

Ommer, R. E. (2000b). Rosie's Cove. In D. Newell and R. E. Ommer (Eds.), *Fishing People, Fishing Places: Traditions and Issues in Canadian Small-Scale Fisheries* (pp. 17-31). Toronto: University of Toronto Press.

Omohundro, J. T. (1994). *Rough Food: The Seasons of Subsistence in Northern Newfoundland.* St. John's: ISER Books.

Overton, J. (1980) Tourism development, conservation, and conflict: Game laws for caribou protection in Newfoundland. *Canadian Geographer, 24*, 40-49.

Parker, J. (1995). Enabling morally reflective communities: Towards a resolution of the democratic dilemma of environmental values in policy. In Y. Guerrier, N. Alexander, J. Chase and M. O'Brien (Eds.), *Values and the Environment: A Social Science Perspective* (33-50). Chichester, England: Wiley.

Pinchot, G. (1987). *Breaking New Ground.* Washington, DC: Island Press.

Pinhey, T. K. and M. D. Grimes (1979). Outdoor recreation and environmental concern: A reexamination of the Dunlap-Heffernan thesis. *Leisure Sciences, 2*, 1-11.

Pitt, D.G. and E. H. Zube (1987). Management of natural environments. In D. Stokols and I. Altman (Eds.), *Handbook of Environmental Psychology* (pp.1009-1042). New York: Wiley.

Red Ochre Regional Board Inc. (1998). *Report on Information Session, Oil and Mineral Exploration, Parsons Pond and Area, April 30th, 1998.*

Regan, T. (1983). *The Case for Animal Rights.* Berkeley: University of California Press.

Reichel-Dolmatoff, G. (1976). Cosmology as ecological analysis: A view from the rain forest. *Man, 11*, 307-318.

Roach, C. M. (2000). Stewards of the sea: A model for justice? In H. Coward, R. Ommer, and T. Pitcher (Eds.), *Just Fish: Ethics and Canadian Marine Fisheries* (pp. 67-82). St. John's: ISER.

Rokeach, M. (1967). *Value Survey.* Sunnyvale, CA: Halgren Tests.

Rokeach, M. (1973). *The Nature of Human Values.* New York: Free Press.

Rolston, H. (1988). *Environmental Ethics.* Philadelphia: Temple University Press.

Rolston, H. (1994). *Conserving Natural Value.* New York: Columbia University Press.

Samdahl, D. M. and R. Robertson (1989). Social determinants of environmental concern: Specification and test of the model. *Environment and Behaviour, 21*(1), 57-81.

Scott, D. and F. K. Willits (1994). Environmental attitudes and behaviour: A Pennsylvania survey. *Environment and Behaviour, 26*(2), 239-260.

Seligman, C. (1989). Environmental Ethics. *Journal of Social Issues, 45*(1), 169-184.

Seguin, C., L. G. Pelletier, and J. Hunsley. (1998). Toward a model of environmental activism. *Environment and Behaviour, 30*, 682-652.

Sinclair, P. R. (2002). Leaving and staying: Bonavista residents adjust to the moratorium. In R. E. Ommer (Ed.), *Resilient Ouport: Ecology, Economy, and Society in Rural Newfoundland* (pp. 289-318). St. John's: ISER.

Singer, P. (1975). *Animal Liberation: A New Ethic for our Treatment of Animals.* New York: Avon.

Smallwood, J. R. (1981). *Encyclopedia of Newfoundland and Labrador.* St. John's: Newfoundland Book Publishers.

Smith, D. H. (1981). Altruism, volunteers and volunteerism. *Journal of Voluntary Action Research, 10*(1), 21-36.

Stainbrook, E. (1968). Human needs and the natural environment. In *Man and Nature in the City.* Washington DC: US Department of the Interior, Bureau of Sport Fisheries and Wildlife.

Stenmark, M. (2002). *Environmental Ethics and Policy Making.* Aldershot, England: Ashgate.

Stern, P. C. and S. Oskamp (1987). Managing scarce environmental resources. In D. Stokols and I. Altman (Eds.), *Handbook of Environmental Psychology* (pp. 1043-1088). New York: Wiley.

Stern, P. C. (1992).Psychological dimensions of global environmental change. *Annual Review of Psychology, 43*, 269-302.

Steward, J. H. (1955). *Theory of Culture Change.* Urbana: University of Illinois Press.

Stokols, D. (1990). Instrumental and spiritual views of people-environment relations. *American Psychologist, 45,* 641-646.

Strang, V (1997). *Uncommon Ground: Cultural Landscapes and Environmental Values.* New York: Berg.

Taylor, P. (1986). *Respect for Nature: A Theory of Environmental Ethics*. Princeton: Princeton University Press.

Thornton, P. (1980). A dynamic equilibrium: Population, economy, and ecology in the Strait of Belle Isle, 1840-1940. Ph.D. dissertation, University of Aberdeen.

Tuan, Y. F. (1977). *Space and Place: The Perspective of Experience.* Minneapolis: University of Minnesota Press.

Tuan, Y. F. (1990). *Topophilia: A Study of Environmental Perceptions, Attitudes, and Values.* Columbia University Press: New York.

Van Liere, K. D., and R. E. Dunlap (1980). The social basis of environmental concern: A review of hypothesis, explanations and emperical evidence. *Public Opinion Quarterly, 44,* 181-197.

Van Liere, K. D. and F. P. Noe (1981). Outdoor recreation and environmental attitudes: Further examination of the Dunlap-Heffernan thesis. *Rural Sociology, 46*, 505-513.

Wall, G. (1995). General v. specific environmental concern: A western Canadian case. *Environmenat and Behaviour, 27*(3), 294-316.

Weigel, R. and J. Weigel (1978). Environmental concern: The development of a measure. *Environment and Behaviour, 10,* 3-15.

White, R. (1995). Are you an environmentalist or do you work for a living?: Work and nature. In W. Cronon (Ed.), *Uncommon Ground: Toward Reinventing Nature* (pp. 171-185). New York: Norton.

Wortman, C. B. and E. F. Loftus (1988). *Psychology*. New York: Alfred A. Knopf.

Wroblewski, J. (2000). The colour of cod: fishers and scientists identify a local cod stock in Gilbert Bay, Southern Labrador. In B. Neis and L. Felt (Eds.), *Finding Our Sea Legs: Linking Fishery People and their Knowledge with Science and Management* (pp. 72-81). St. John's: ISER.

de Young, R. (1993). Changing behaviour and making it stick: The conceptualisation and management of conservation behaviour. *Environment and Behaviour, 25*(4), 485-505.

Appendix 1: Semi-Structured Interview Questions

1 a) Can you locate any wetlands close to your community?

b) Where?

c) How would you describe that wetland?

2 a) Do you think that wetland is an asset or a detriment to your community, or neither?

b) Why?

c) i) Does that wetland provide habitat for waterfowl or wildlife, and are there any endangered or rare species ever present?

ii) Do you know if the numbers or variety of species have increased or decreased significantly over the last few years?

iii) Does that wetland affect the town's water supply?

iv) Does that wetland provide flood protection?

v) Does that wetland provide erosion control?

vi) Does that wetland provide opportunities for any recreational activities?

vii) Does that wetland provide any food resources?

viii) Can you think of any other uses that wetland might have?

3 a) Do you visit that wetland for any purpose? If so, for what purpose and with whom?

b) How frequently do you visit that wetland?

4 a) Do you think that it is important to preserve that wetland? If so, why?

b) How important do you think it is to protect that, or other wetlands, so that future generations may benefit from them?

c) If you never used that wetland, or thought it had no benefit to you or other, would it bother you if it was protected or not?

5 a) Do you know if that wetland is currently protected in any way? How is it protected?

b) Do you think the current level of protection is sufficient, insufficient, or too stringent?

c) How would you like to see this change?

6 a) How would you feel if someone wanted to build on, or adjacent to that wetland?

b) Would you actively oppose any such developments? If so, how?

7 a) How do you feel about human interventions to increase fish and wildlife use of that or other wetlands?

b) How do you feel about initiatives to educate and promote awareness of the wetlands within your community?

8 a) Should that wetland be preserved from:

i) Drainage and filling?

ii) ATV use?

iii) Hunting or fishing?

iv) Wood cutting?

9 a) Are you, or have you previously been involved in any activities related to the wetland or the natural environment generally, such as clean-up campaigns, trail-building, installing nesting boxes, bird counting, or any other?

b) Are you a member of any environmental groups?

10 a) Do you support the promotion of the wetland for tourism?

b) Would you like to see the development, or further development of boardwalks or trails on that or other wetlands?

11 a) Who do you think should be primarily responsible for managing the wetland?

b) If you were asked to participate in the management of the wetland, would you?

c) How would you feel about making a donation to enhance the wetland?

12 a) Are you aware of the Municipal Wetlands Stewardship programme? If so, how did you become aware of it?

b) Are you aware of the objectives of the programme?

c) Do you support the programme and feel your community has benefited from it / would you like to see the programme adopted by your community?

d) Has the programme changed the way you view or use the wetland?

13 a) If a proposal was put forward to fill in that wetland, and develop the area in a manner that would be of economic benefit to your community, would you support the venture or like to see the wetland preserved?

14 a) Do you have any other comments?

Appendix 2: Sample Questionnaire

Part 1: General Information

1) Age: please circle the appropriate category. 18-35, 36-50, 51-69, 70+

2) Male or female?

3) Occupation?

4) Household income per year: please circle the appropriate range.
Under 30,000, 30,000-59,999, 60,000-89,000, over 90,000, prefer not to say.

5) To what level are you educated?

6) Do you hold any position of authority or responsibility within the community? If so, please state your position?

Part 2: Please indicate whether you strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree, or strongly agree with each of the following statements by placing a tick in the appropriate column.

	Statement	Value (note 1)	Response: Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1	One of the worst things about overpopulation is that many natural areas are getting destroyed for development	Eco					
2	I can enjoy spending time in natural settings just for the sake of being out in nature	Eco					
3	Environmental threats such as ozone depletion have been exaggerated	Apath					
4	The loss of the rainforest concerns me because it will restrict the development of new medicines	Anth					
5	Sometimes it makes me sad to see forests cleared for agriculture	Eco					
6	It seems to me that most conservationists are somewhat paranoid	Apath					
7	I prefer wildlife reserves to zoos	Eco					
8	I do not think the problem of depletion of natural resources is as bad as many people make it out to be	Apath					
9	I find it hard to get too concerned about environmental issues	Apath					
10	I need time in nature to be happy	Eco					
11	The thing that concerns me most about deforestation is that there will not be enough lumber for future generations	Anth					
12	I think that humans will survive even without conserving nature	Apath					
13	Sometimes when I am unhappy I can find comfort in nature	Eco					

	Statement	Response					
		Value (note 1)	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
14	Most environmental problems will solve themselves given enough time	Apath					
15	I don't care about environmental problems	Apath					
16	I'm opposed to programs to preserve wilderness	Apath					
17	It makes me sad to see natural environments destroyed	Eco					
18	The most important reason for conservation is human survival	Anth					
19	One of the best things about recycling is that it saves money	Anth					
20	Nature is important because of what it can contribute to the pleasure and welfare of humans	Anth					
21	Too much emphasis has been placed on conservation	Apath					
22	Nature is valuable for its own sake	Eco					
23	The most important reason to preserve natural resources is to maintain a high quality of life	Anth					
24	Being out in nature is a great stress reliever for me	Eco					
25	One of the most important reasons to conserve is to ensure a continued high standard of living	Anth					
26	One of the most important reasons to conserve is to preserve wild areas	Eco					
27	Continued land development does not concern me as long as a high quality of life can be preserved	Anth					
28	Sometimes animals seem almost human to me	Eco					
29	Humans are as much a part of the ecosystem as animals	Eco					

Note 1: The value category does not appear on the circulated questionnaire.

Appendix 3: Participation Consent Form

Interview Consent Form

Measuring the Success of Municipal Wetlands Stewardship as an Emerging Principle in Rural Newfoundland Environmental Value Systems

Researcher: Tim Hollis, Department of Geography, Memorial University of Newfoundland

The purpose of this research is to evaluate the success of Municipal Wetlands Stewardship Programmes in Newfoundland by studying physical changes to these wetlands, and by identifying changes in attitudes to the wetlands and the environment in general, in members of Wetlands Stewardship and non-Stewardship communities.

Participation in this study is voluntary, a participant's consent is not binding, and he or she may withdraw from this study at any time. Participants will remain anonymous and names will not appear on any of the questionnaires. The principle researcher alone will be aware of the participant's identity. Information provided in the questionnaire will only be used for the purposes of this study.

This consent form is required by the Interdisciplinary Committee on Ethics in Human Research, Memorial University of Newfoundland. The completed forms will be kept separate from the questionnaires.

I understand the nature of this study and give my consent to be a participant.

Name: _____

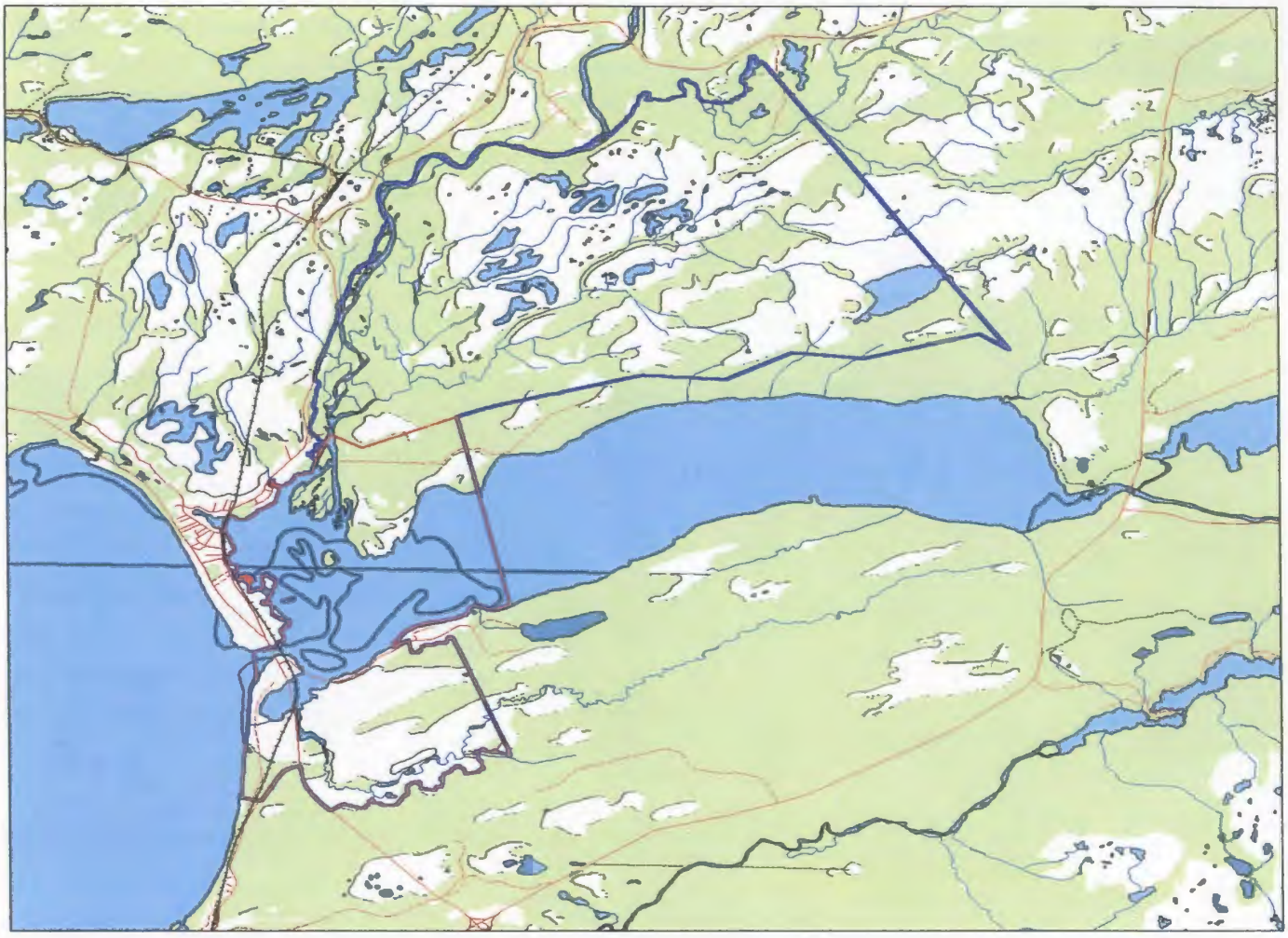
Signature: _____

Tel. No: _____

Date: _____

Appendix 4: Stephenville Crossing Wetlands Stewardship Zone

STEPHENVILLE CROSSING MUNICIPAL WETLAND STEWARDSHIP ZONE



LEGEND

- Stewardship Zone Boundary
- Management Unit Boundary
- Road
- Railbed
- Water
- Peatland
- Forest
- Stream

Appendix 5: Data Tables

Appendix 5.1: General Preservation Choice

	Important to Preserve the Wetland	Not Important to Preserve the Wetland
Gambo (n=30)	27 (90%)	3 (10%)
Glovertown (n=30)	29 (97%)	1 (3%)
Stephenville Crossing (n=29)	27 (93%)	2 (7%)
P. Pond (n=30)	18 (60%)	12 (40%)

Appendix 5.2: Preferred Level of Decision Making Authority

	Government Level	Local Level	Combination	No Choice
Gambo (n=30)	16 (53%)	7 (23%)	6 (20%)	1 (3%)
Glovertown (n=30)	7 (23%)	11 (23%)	10 (33%)	2 (7%)
Steph. Crossing (n=30)	6 (20%)	16 (53%)	7 (23%)	1 (3%)
P. Pond (n=30)	9 (30%)	12 (40%)	6 (20%)	3 (10%)

Appendix 5.3: Involvement in Environmental Activities and Willingness to Participate in Wetlands' Management

	Presently or previously involved		Would become involved		
	Yes	No	Yes	No	Don't know
Gambo (n=30)	11 (37%)	19 (63%)	21 (70%)	6 (20%)	3 (10%)
Glovertown (n=30)	15 (50%)	15 (50%)	22 (73%)	4 (13%)	4 (13%)
S. Crossing (n=30)	8 (27%)	22 (73%)	22 (73%)	4 (13%)	4 (13%)
Parsons Pond (n=30)	4 (13%)	26 (87%)	18 (60%)	12 (40%)	0 (0%)

Appendix 5.4: Relationship Between Involvement in Environmental Activities and Trade-Off Decision

	Involvement	Trade-Off Decision		
		Accept	Decline	Don't Know
Gambo (n=23)	**Currently or previously involved (n=8)**	0 (0%)	8 (100%)	0 (0%)
	Not involved (n=15)	11 (73%)	3 (20%)	1 (7%%)
Glovertown (n=29)	**Currently or previously involved (n=15)**	3 (20%)	9 (60%)	3 (20%)
	Not involved (n=14)	4 (29%)	9 (64%)	1 (7%)
Steph. Crossing (n=30)	**Currently or previously involved (n=8)**	2 (25%)	3 (38%)	3 (38%)
	Not involved (n=22)	8 (36%)	13 (59%)	1 (5%)
Parsons Pond (n=30)	**Currently or previously involved (n=4)**	4 (100%)	0 (0%)	0 (0%)
	Not involved (n=26)	22 (85%)	2 (8%)	2 (8%)

Appendix 5.5: Relationship Between Willingness to be Involved in Decision-Making and Trade-Off Decision

	Willingness to be Involved	Trade-Off Decision		
		Accept	Decline	Don't Know
Gambo (n=21)	**Would become involved (n=15)**	7 (47%)	7 (47%)	1 (7%)
	Would not become involved (n=6)	3 (50%)	3 (50%)	0 (0%)
Glovertown (n=26)	**Would become involved (n=22)**	6 (27%)	12 (55%)	4 (18%)
	Would not become involved (n=4)	1 (25%)	3 (75%)	0 (7%)
S. Crossing (n=26)	**Would become involved (n=22)**	7 (32%)	13 (59%)	2 (9%)
	Would not become involved (n=4)	3 (75%)	1 (25%)	0 (0%)
Parsons Pond (n=30)	**Would become involved (n=18)**	15 (83%)	2 (11%)	1 (6%)
	Would not become involved (n=12)	10 (83%)	0 (0%)	2 (17%)

Appendix 5.6: Comparison of Normalised Values by Participation, and Willingness to Participate

	Involved		
	Eco	**Anthro**	**Apath**
Gambo STDEV	0.46	0.48	0.79
Involved	0.58	-0.03	-0.28
Not involved	-0.31	0.02	0.15
G/town STDEV	0.42	0.79	0.67
Involved	-0.19	-0.14	-0.03
Not involved	0.20	0.15	0.04
S. Crossing STDEV	0.45	0.89	0.54
Involved	0.33	-0.57	-0.40
Not involved	-0.18	0.33	0.16
Parsons Pond STDEV	0.33	0.62	0.50
Involved	-0.15	0.17	-0.47
Not involved	0.04	-0.04	0.12

	Willing to be Involved		
	Eco	**Anthro**	**Apath**
Gambo STDEV	0.45	0.49	0.81
Would be involved	0.13	0.00	0.10
Would not be involved	-0.35	-0.01	-0.27
G/town STDEV	0.42	0.77	0.58
Would be involved	0.05	0.06	0.02
Would not be involved	-0.20	-0.24	-0.07
S. Crossing STDEV	0.45	0.90	0.52
Would be involved	0.14	0.00	-0.24
Would not be involved	-0.73	0.03	1.27
Parsons Pond STDEV	0.33	0.62	0.50
Would be involved	0.11	0.38	0.01
Would not be involved	-0.22	-0.77	-0.01

Appendix 5.7: Relationship Between Perceptions of Sufficiency of Regulations and Trade-Off Response

	Perception of Regulations	Trade-Off Decision		
		Accept	Decline	Don't know
Gambo (n=10)	**Insufficient regulations (n=9)**	1 (11%)	7 (78%)	1 (11%)
	Too much regulation (n=1)	1 (100%)	0	0
Glovertown (n=14)	**Insufficient regulations (n=14)**	3 (21%)	9 (64%)	2 (14%)
	Too much regulation (n=0)	-	-	-
Steph. Crossing (n=17)	**Insufficient regulations (n=15)**	4 (27%)	7 (47%)	4 (27%)
	Too much regulation (n=2)	2 (100%)	0	0
Parsons Pond (n=17)	**Insufficient regulations (n=11)**	8 (73%)	1 (9%)	2 (18%)
	Too much regulation (n=6)	4 (67%)	1 (17%)	1 (17%)

Appendix 5.8: Relationship Between Perceptions of Threats and Pressures and Trade-Off Response

	Perception of Pressures	Trade-Off Decision		
		Accept	Decline	Don't Know
Gambo (n=23)	**Specifically refer to a perceived lack of pressure (n=5)**	3 (60%)	2 (40%)	0 (0%)
	No references to pressures (n=10)	7 (70%)	3 (30%)	0 (0%)
	References to pressures (n=8)	1 (13%)	6 (75%)	1 (13%)
Glovertown (n=30)	**Specifically refer to a perceived lack of pressure (n=5)**	1 (20%)	3 (60%)	1 (20%)
	No references to pressure etc (n=14)	3 (21%)	9 (64%)	2 (14%)
	References to pressures (n=11)	3 (27%)	7 (64%)	1 (9%)
Steph. Crossing (n=30)	**Specifically refer to a perceived lack of pressure (n=3)**	1 (33%)	2 (67%)	0 (0%)
	No references to pressure etc (n=21)	8 (38%)	10 (48%)	3 (14%)
	References to pressures (n=6)	1 (17%)	4 (67%)	1 (17%)
Parsons Pond (n=30)	**Specifically refer to a perceived lack of pressure (n=13)**	11 (85%)	1 (8%)	1 (8%)
	No references to pressure etc (n=8)	6 (75%)	1 (13%)	1 (13%)
	References to pressures (n=9)	9 (100%)	0 (0%)	0 (0%)

Appendix 5.9a): Comparison Between Normalised Value Scores of Hunters and Non-Hunters

	Eco	Anth	Apath
Gambo			
STDEV	0.46	0.48	0.79
Non –hunters	0.01	0.01	-0.05
Hunters	-0.02	-0.04	0.15
G'town			
STDEV	0.42	0.79	0.67
Non-hunters	-0.03	0.26	0.11
Hunters	0.07	-0.61	-0.25
Steph. Crossing			
STDEV	0.45	0.89	0.54
Non-hunters	0.02	-0.12	-0.08
Hunters	-0.09	0.71	0.30
Parsons Pond			
STDEV	0.33	0.62	0.50
Non-hunters	-0.97	-0.48	0.43
Hunters	0.49	0.24	-0.21

Appendix 5.9b): Comparison Between Normalised Value Scores of Hunters in Each Community

	Eco	Anth	Apath
STDEV all hunters	0.38	0.79	0.65
Gambo hunters	-0.42	-0.11	0.52
G'Town hunters	-0.45	-0.64	-0.22
SX hunters	0.07	0.88	-0.26
PP hunters	0.55	0.30	-0.01

Appendix 5.10 a)-f): Comparisons of Value Orientations of KDMP and 'Sanctuary' Users

a) KDMP users compared to all others

	Eco	Anthro	Apath
STDEV All individuals	0.43	0.71	0.67
Ave all	4.31	3.40	2.17
KDMP	-0.31	0.35	-0.01
Non KDMP	0.06	-0.05	0.00

b) 'Sanctuary' users compared to all others

	Eco	Anthro	Apath
STDEV All individuals	0.43	0.71	0.67
Ave all	4.31	3.40	2.17
Sanct.	0.29	-0.20	-0.76
Non Sanct.	-0.05	0.04	0.13

c) KDMP users compared to others in Glovertown

	Eco	Anthro	Apath
STDEV GN	0.42	0.79	0.67
Ave all GN	4.19	3.36	2.20
KDMP	-0.03	0.37	-0.06
Non KDMP	0.03	-0.31	0.08

d) Sanctuary users compared to others in Stephenville Crossing

	Eco	Anthro	Apath
STDEV SX	0.45	0.89	0.54
Ave all SX	4.46	3.47	1.82
Sanct	-0.05	-0.25	-0.29
Non Sanct	0.07	0.33	0.53

e) KDMP users compared to other appreciative users

	Eco	Anthro	Apath
STDEV App Users	0.45	0.77	0.60
Ave all app.	4.40	3.39	1.87
KDMP	-0.49	0.24	0.47
Non KDMP	0.43	-0.21	-0.41

f) 'Sanctuary' users compared to other appreciative users

	Eco	Anthro	Apath
STDEV App Users	0.45	0.77	0.60
Ave all app.	4.40	3.39	1.87
Sanct	0.09	-0.18	-0.35
Non Sanct	-0.06	0.12	0.23